COMPUTERWORLD

THE NEWSWEEKLY FOR THE COMPUTER COMMUNITY

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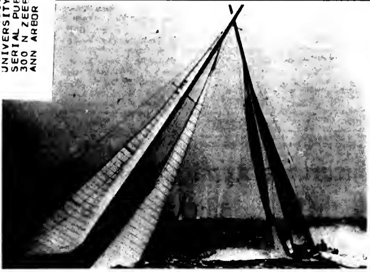

Photo by World Wide Photos

'Computers Courageous'

Intrepid, right, smashes into a swell in wind-whipped waters off Newport, R.I. as she tacks a few seconds ahead of challenger Courageous. Intrepid and Courageous are competing against each other for the honor of defending the America's Cup against a foreign challenger in races scheduled next month. On board Courageous, a minicomputer makes performance and navigational calculations. (Story on page 5)

Tomorrow's Terminals May Feature Keyless Keyboards

By Ronald A. Frank
Of the CW Staff

STOCKHOLM – The IBM terminals of tomorrow may have keyboards without keys and be able to operate in environments that would cripple today's terminals.

At least one such device has already been introduced by IBM in Sweden, and it may be the forerunner of a new breed of terminals from IBM.

Called the 5937, the industrial terminal was introduced last January in this country after the completion of development work by IBM's Nordic Laboratories outside Stockholm.

Thus far the 5937 is available only in Sweden with first deliveries scheduled for early in 1975, but introduction in other countries, including the U.S., would cause few problems if and when IBM decides the time is right.

The 5937 contains a flat Mylar panel (or elastic diaphragm) instead of keys and on the panel are colored squares and circles which look like keys. When an operator pushes on the Mylar sheet on one of the squares or circles, the panel is brought into contact with a similar panel underneath. On both panels small areas of conductive metals are pressed together to generate a signal for the character or function indicated on the front panel.

The terminal is meant for "hostile environments," such as meat packing houses or steel mills, and it is completely sealed against outside dust and other foreign matter. The device is so completely ruggedized that it could "be hosed off" with water without being affected, according to an IBM spokesman.

Supports 3270 CRTs

Of more than passing interest to the business DP user is the ability of the 5937 to operate in software configurations that support IBM 3270 CRTs. This includes any 360 or 370 running with IMS or CICS or using Btam, Tcam or Vtam.

In these configurations, the 5937 appears as a 3270 to the system programs and mainframe. It can operate through a 3704 or 3705 front end.

The terminal uses Ebcdic transmission code and can work on a four-wire multidrop line with other 3270-type terminals. Up to 32 multidrop terminals can be supported on one line.

The 5937 has a 240-character gas plasma display screen which is arranged in six rows of 40 characters each. Because it is designed for use in a factory environment by operators who do not identify with "normal" keyboard layouts, the terminal includes letter keys that are arranged alphabetically instead of in typewriter or other terminal layouts.

Also included are 20 function keys and 18 of these can be assigned specific meanings by the user. More conventional CRT control keys and a numeric pad arrangement round out the flat keyboard.

The terminal can interface with other devices through digital I/O features. A digital input feature allows up to 16 individually addressable units to be at-

(Continued on Page 4)

CW Photo by Ronald A. Frank

The IBM 5937 terminal includes an almost vertical flat keyboard and a recessed power switch to prevent accidental shut down.

As Part of Ibols

ANS Cobol Offered for Interdata Mini

By Don Leavitt
Of the CW Staff

TUCSON, Ariz. – An ANS Cobol compiler is available to Interdata 16-bit mini users as part of the modular Integrated Business-Oriented Language Support (Ibols) package from Diversified Data Systems, Inc. (DDS).

The compiler is described by DDS as an extension of Level 1 ANS Cobol '68. It supports Isam files, the COPY verb "and many related features."

The compiler accepts the Cobol D source code developed for use on IBM's 360 with relatively minor modifications. Compile and execution times are close to those on IBM equipment, the vendor added.

Ibols also includes operating system extensions, enhancements to the Interdata assembler, a range of stand-alone utilities and various subroutines that are Callable from Cobol, Fortran or Assembler source programs, a spokesman said.

Standardized conventions for calling sequences, argument passing and returning sequences provide Cobol-, Assembler- and Fortran-compatibility of object modules. Cross-reference directories are supported, DDS noted.

Symbolic Assembler source code is an optional output of the Cobol compiler, a spokesman added.

The DOS extensions provided under Ibols include individual I/O drivers for the Telefile and Diva disk controllers, Interdata's Programmable Asynchronous Line System and the Universal Interface Module.

Modifications and enhancements include a DOS reorganized to permit maximum overlay space for application programs and revised line printer and card reader drivers.

An assembler preprocessor supporting the COPY verb and symbol table generator for a cross-reference directory and a postprocessor providing user selection of output are among the other software extensions provided by Ibols.

Compact Assembler

Ibols also offers modifications to the assembler to permit its use on 16K Interdata systems operating under the reorganized DOS. The compact assembler can manage programs with approximately 200 labels, DDS claimed.

Stand-alone utilities available under

(Continued on Page 2)

On the Inside This Week

MIB Medical Data Bank Institutes Notification, Inspection Rights

By Nancy French
Of the CW Staff

BOSTON, Ma. – Effective Jan. 1, the Medical Information Bureau (MIB) will no longer be permitted to collect and store confidential health information on insurance applicants without their knowledge or access as a result of pressure brought by the state insurance commissioners of Pennsylvania and Massachusetts.

Amendments made to MIB rules 16 and 17, governing member insurance companies, spell out procedures for prenotification and review that will apply to member insurance companies nationwide.

The new policies specify that insurance applicants be "prenotified" in writing that health data they supply will be transmitted to the MIB for storage in a computerized data bank when there is a possibility the information may be shared among the various member insurance companies.

Secondly, according to the amendments, an applicant who wishes to review his file may do so by requesting that the information be forwarded to his insurance company, which will in turn make it available to the attending physician, thereby allowing the patient to review the data with his doctor.

Because the disclosure procedure seems somewhat "round-about," some critics say it circumvents the issues raised in transmitting health records directly to a patient.

It has been suggested that the "prenotice" appear on the insurance application itself, specifying the storage and review procedure in some detail.

No Disclosure Without Permission

When the amendments go into effect in January, the MIB, which acts as an information exchange organ for its members, will not be permitted to disclose any

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To Act as Resource Center

Institute Forms to Promote DP Security

By Patrick Ward

Of the CW Staff

NORTHBORO, Mass. – Users interested in developing a comprehensive security system for their sites can contact the Computer Security Institute, a for-profit organization backed by a "blue ribbon" advisory board.

The newly launched institute will act as a resource center, gathering, organizing, analyzing and distilling relevant information and then converting it into "practical and easy-to-use formats" for the user, according to the institute.

Institute members will receive the bimonthly *Computer Security Newsletter* edited by Belden Menkus, a management consultant involved with computer security.

The issues will contain news on security equipment and services, including software packages, discussions and analyses of members' specific computer security problems, commentaries by experts and a summary of new literature.

Institute members will also receive at least three annual reports, two evaluating security equipment and services and a third researching a subject of timely interest.

Work has begun on "A Cost/Benefit Analysis of Automatic Fire Suppression Systems for Computer Facilities," the institute stated.

Expert Commentary

Another report under consideration is "An Evaluation of Physical Access Control Systems," focusing on methods of establishing objectives and the benefits and drawbacks of locks and keys, magnetic cards and personal recognition. Additionally proposed is another report, "An Analysis of Air Conditioning Equipment Reliability."

The institute also plans to mail members a self-administered test once yearly. In addition, members will receive a computer security manual available only to them.

Members can also obtain the "Computer Security Buyer's Guide," described as a "comprehensive survey of security equipment and services," cross-referenced by product and manufacturer.

The above services are all free to members.

The institute will also offer a program of two-day seminars, each day of which is devoted to a separate area of DP security. The cost to members is $125/day for one session or $225 for two.

An advisory board to assist in offering these services, has been formed, according to the institute.

Advisory board members are Belden Menkus; Lindsay Laire Baird Jr., general manager of Advanced Computer Techniques, Security Consulting Division; Peter S. Browne, manager of security operations, GE Information Services Business Division, Robert H. Courtney Jr., manager of data security and privacy, IBM Corp.; Robert V. Jacobson, vice-president, Sentor Security Group, Inc.; Guy R. Migliaccio, assistant vice-president, Marsh & McLennan; and Joseph J. Wasserman, president, Computer Audit Systems, Inc.

Membership in the Computer Security Institute costs $245. The organization is located at Five Boston Post Road/W. Main St., 01532.

Insurance Applicants Receive Right to Inspect Personal File

(Continued from Page 1)

information it may have in an individual's file without receiving a request from that individual in the form of a new insurance application or a formal claim.

If a client questions the accuracy of that information, he may contact the bureau "in accordance with procedures set forth in the Fair Credit Reporting Act."

Procedures established to deal with cases of disputed accuracy place the responsibility of correcting incorrect or incomplete data on the "reporting company," i.e., the insurance company who provided the information to the MIB in the first place.

If the investigation of an applicant's complaint reveals an incomplete or inaccurate report or information which can no longer be verified, the reporting company must notify the MIB, which will withdraw, delete, correct or supplement the information in the individual's file.

Further, MIB will make the changes known to any person specifically designated by the applicant who has received the erroneous information within the six months prior to the correction.

'He Already Did It'

Jonathan Brant, counsel for the Governor's Commission on Privacy and Personal Data, Commonwealth of Massachusetts, explained that former Pennsylvania Insurance Commissioner Herbert Denenberg should be credited with bringing about the new MIB policy.

A negotiating session had been arranged by Massachusetts' insurance commissioner and the privacy group with MIB's executive director Joseph Wilberding but, "when we got there, Denenberg had already done it," Brant said.

The new policies have already gone into effect in Pennsylvania. Nationwide adoption is expected January first.

The Massachusetts privacy group plans to carry the measure one step further by requesting MIB to clarify details of the disclosure procedures.

Additionally, the group plans to publicize the new inquiry rights and the existence of the MIB throughout the state.

Interdata Mini Gets ANS Cobol

(Continued from Page 1)

Ibols include a Sort/Merge, a library and directory system used in conjunction with the COPY verb, a job control library and a source library, as well as Indexed Sequential (Isam) disk support.

A multiple CRT input polling routine with program fetching, a hex file dump and an on-line file update routine are also available.

The Cobol, Fortran or Assembler source Callable subroutines range from string operators through Isam modules to add, delete, replace and scan randomly or sequentially.

There are also miscellaneous routines for debugging, CRT support, simplified I/O handling, file copying and file skipping, the spokesman added.

Ibols runs on DOS-oriented 16-bit Interdata minis with 24K minimum storage, but the compact assembler will function in 16K. Some disk capability is assumed for several of the modules (Isam and Sort/Merge, for example), but disk is not required for most, the vendor noted.

Ibols will be adapted to the 32-bit Interdata machines "in the future," DDS said.

The modules are separately priced and vary from $2,500 for the Cobol compiler to $50 for each of the string operations. Isam instructions are compiled by the basic Cobol compiler, but to execute them, users need the Isam utilities ($500 total) and the Isam operations (500), the company noted.

DDS can be reached through P.O. Box 50404, 85703.

FBI Director Tells Attorneys

Privacy Bills Too 'Restrictive'

By a CW Staff Writer

LAKE OZARK, Mo. – Americans should be more concerned with the rising crime rate and worry less about possible government invasion of privacy in arresting criminals, FBI Director Clarence Kelly told a recent meeting of the National District Attorneys Association here.

Citing a 15% upsurge in serious crime in the U.S. during the first quarter of 1974, Kelly said the burden of guilt for this increasing crime is generally placed on the criminal justice system.

"I believe many in our society need to examine their perspective with regard to crime and those who enforce the law," he asserted.

Acknowledging that, as the servants of society, law enforcement agencies must obey society's rules, Kelly pointed out the need for "an acceptable balance between individual rights and the rights of society."

Kelly said much of the proposed privacy legislation "would do great harm to the cause of law enforcement."

"No one argues that regulation is unnecessary," but some measures seem "excessively restrictive, and that concerns us," he explained.

"Purging of criminal records after a specified number of years," Kelly charged, would "prevent police from making use of vital information" and "would destroy the central concept that second offenses would be punished more harshly than first offenses."

The FBI's National Crime Information Center, where names of wanted criminals are stored, has been "maligned," by people who regard the computer as a "monster that threatens serious invasions of privacy," Kelly continued

"I would suggest that to a man looking down the business end of a robber's pistol, the supposed menace posed by the FBI's computerized files would seem remote indeed," he remarked.

Americans are "oppressed" not by law enforcement but by crime, Kelly said.

"When Americans fear to walk to a corner drugstore at night they are oppressed," he said. "When they are defrauded out of their life's savings, they are oppressed. When corporation executives feel compelled to take out kidnap insurance, they are oppressed."

Kelly affirmed that America's primary defense against this kind of oppression is the criminal justice system, and "we should not permit our perspective or our sense of values to be distorted."

Forro Moves Against IBM

SAN FRANCISCO, Calif. – Forro Precision, Inc. has filed a $36 million treble damage suit in federal court here against IBM, alleging violations of the Sherman and Clayton Acts and seeking monetary damages and injunctive relief.

In addition to charging IBM with infractions of sections I and II of the antitrust laws, the small components manufacturer claims IBM interrogated Forro employees, seized "business records" and otherwise threatened and coerced Forro with the intent of destroying its business, Joseph M. Alioto, counsel for the plaintiff, said.

The lawyer contended IBM used pricing documents, copied during a July 1973 investigation of the Forro plant, to prevent the company from completing sales of component parts to a number of its customers.

Pricing information was obtained as part of IBM's research into alleged thefts of disk drive trade secrets by former employees from its San Jose peripheral facilities last year, he said.

In addition to the investigation at Forro, searches were made at four other California and Arizona companies [CW, July 11, 1973]. Some but not all of the criminal charges filed as a result of IBM's complaints were subsequently dismissed [CW, April 17].

Alioto noted, however, that no Forro employees were arrested in connection with the San Jose case and that IBM never brought charges against the company.

The Forro complaint also charges IBM with monopolization of the electronic data processing industry since 1954, competition with Forro in the manufacture and sale of computer components and damage to the company from IBM practices.

Alioto expects that, in certain areas, the Forro case will be consolidated with other West Coast cases against IBM for pretrial procedures.

IBM has not yet filed either an answer or a commentary on the charges.

Felons To Show How To Cheat Computers

NEW YORK – Convicted felons – including a forger – will be on furlough from prison for two days next month to warn corporate executives about crime in business, ranging from computer fraud to accounting fraud.

The "Symposium on Crime in Business" is designed to tell domestic and international corporations and business interests how to protect themselves by showing them just how such crimes are perpetrated.

Most of the presentations will overlap with computers in some areas, the organizers said. Of particular interest, however, will be presentation by Whitney North Seymour Jr. on "Why Justice Fails" and a discussion on the infiltration of legitimate business by organized crime, by John D. O'Connell, senior vice-president of Intertel, Inc.

Dr. Ullrich Klamm will present "A Study in Fraud – European Style" discussing a British case, and Edmund McNamara, a former FBI agent, will cover computer involvement and tampering in industrial espionage.

Fee for the two day symposium on Sept. 11 and 12 is $250. Further details can be furnished by de Hellerman & Co., 747 Third Ave., New York, N.Y. 10017.

Computer Culls Cows

DENVER – How many cows can a computer hold? Well, a System/3 here has about 110,000.

The computer is used by the North American Limousin Foundation to trace the genealogical history and keep records on the steadily increasing Limousin herds in America.

The System/3 maintains a "herd book," a historical record of every Limousin registered, going back four generations. Birth, weaning and yearling weights of each animal are compared with all others in the herd to help ranchers determine the genetically superior animals. These animals will then be used to produce future generations, with favored genetic traits.

Questions Feasibility

Patent Head Dubious on Computer Use

By Edith Holmes
Of the CW Staff

HONOLULU – Completely computerized patent and publication search files just may not be feasible, U.S. Patent Commissioner C. Marshall Dann told the Patent, Trademark and Copyright Section of the American Bar Association (ABA) during its annual gathering here this month.

Dann described the predictions of some that one day every patent examiner will have a computer terminal in his office permitting instant retrieval of a complete collection of domestic and foreign patents and publications stored in a data bank.

But even if such a systems proves reasonable, a "completely mechanized approach to searching all the prior art in a field is still many years from reality," Dann said.

The Patent Office has been studying the possibility of using machines for searching since 1948. In 1971 the office began an extensive experiment using computers to assist in searching and classifying patents.

Known as the "Patent Office Techniques of Mechanized Access and Classification," or Project Potomac, the experiment was suspended in 1972 when estimated costs totalled nearly $40 million for a fully operational system, according to Dann [CW, June 26]. And he does not expect to see a project of this magnitude reinstituted within the forseeable future.

"We do not believe the present state of data processing technology will permit full text searching of patents by computer, except in very narrow technical areas," he said.

The Patent Office based its decision to suspend Project Potomac on a National Bureau of Standards study which emphasized that patent examination "is a complex intellectual process involving a search for concepts," Dann explained.

Not only does the nature of the process make the feasibility of such a large project questionable, Dann said, but estimates of the expense of converting existing patent text into machine-readable form range from $14 to $50 per patent.

This would mean a minimum cost of $50 million to convert the 3.5 million U.S. patents issued before data base printing began, he commented.

Several trillion bit memories, recently available and costing millions of dollars each, would be needed just to store the text of all U.S. patents.

Furthermore, Dann remarked, the NBS study indicated access time for these memories is so slow that they may be impractical for patent searching, and their newness makes reliability an unknown.

"Our office will continue to look for ways of introducing mechanized searching whenever possible," he commented. But he emphasized whatever technology is introduced must be cost-effective and must "help us to do our job at least as well as we are doing it now."

At present, "so far as the mechanized searching of patents is concerned, we have only a few limited systems in use, mostly using punched cards," Dann said.

He told members of the ABA the office will seek a balanced approach to the development of patent handling, with a short-range objective of improving the present manual system for classifying patents so they can be effectively searched, and a long-range objective of employing computers to do as much of the searching as possible.

The Commissioner plans to consolidate three units within the office – the units responsible for classifying patents, for experimenting with computer-assisted searching and for assessing technology and forecasting – into one organization.

Stressing that his office wishes to cooperate with the private sector in developing mechanized systems for searching, Dann noted some magnetic tapes of patent texts will be made available to members of the public.

The Patent Office also expects to continue its present work toward international cooperation on patent classification and searching, according to Dann.

This includes participation in the Committee on International Cooperation in Information Retrieval Among Examining Patent Offices, efforts to improve the International Patent Classification System and discussions with an agency of the Austrian government on the possibility of making computer tapes available in connection with a patent documentation project.

Recognizing that the problems in computerized searching of trademarks are fewer than in the case of patents, Dann said contracts have been signed with three private firms to conduct at least 750 searches in connection with pending trademark applications.

Chattanooga Decision Due Soon

By a CW Staff Writer

CHATTANOOGA, Tenn. – Nearly a year after this city installed an IBM 370/145 without competitive bidding, a judge is expected to decide soon if the city can continue with the machine or must take bids from other manufacturers.

Chancellor Herschel Franks is studying a suit brought by the HIS and NCR branch managers and two local residents. They charge that the city violated an ordinance requiring competitive bidding on any equipment costing more than $2,500. Beyond that, the two branch managers contend that the no-bid acquisition violated their right to earn a living.

The city has replied that it is leasing the 145 and peripherals for $22,000/mo under an agreement with IBM going back to 1960 and that the ordinance does not apply to leases, only purchases.

As far as the two branch managers are concerned, the city's DP manager said, their companies' products were not considered because neither manager had called on him and he was unfamiliar with their companies' equipment.

Attorneys for the complainants have argued that the lease agreement between the city and IBM is an attempt to circumvent the ordinance.

Chancellor Franks has taken the case under advisement and a ruling is expected within 30 days. Attorneys for both sides say the ruling will probably decide whether the city has to go to competitive bidding before signing a longterm contract for a machine.

Future Keyboards May Be Keyless

(Continued from Page 1)

tached with input in BCD code.

A digital output capability can utilize either eight latching contact points or a digital output bus which includes a 128-character buffer.

Although the terminal is designed to operate in temperatures from +30° to 110° F and up to 95% humidity, it contains a built-in test routine for use when malfunctions occur. If the device is not operating properly, it can be removed and replaced with a spare unit.

On-site maintenance is not desirable because of the adverse operating environment, a spokesman said.

The 5937 will cost about the equivalent of $250/mo on extended term lease plan and will be produced at IBM's Jarfalla, Sweden factory.

Lars Arosenius, a staff member at IBM's Nordic Labs, demonstrates the 5937 industrial terminal.

'Computers Courageous'

Cup Contender Takes Mini to Sea

By Nancy French
Of the CW Staff

NEWPORT, R.I. – The 12-meter yacht Courageous, one of two American boats competing to defend the America's Cup next month, is using a minicomputer to make performance and navigation calculation as part of its race plan.

The computer – a Data General Nova 1200 – supplements the expertise of the skipper and crew during a race by doing the navigational calculations needed to maintain the craft's best speed.

Most of the yacht's instruments are connected to the computer and supply signals representing apparent wind speed and direction, boat speed, heel angle, compass course and other variables.

Knowledge of true wind speed and direction enables the navigator and tactician to decide how best to race the course. Although true wind speed and direction cannot be measured directly on a moving vessel, both can be calculated from instrument readings – and this is the task assigned to the mini.

The Nova system allows the navigator to "ask" the computer to display true wind speed and direction – updated four times a second.

Another task assigned to the Nova 1200 mini is calculating the progress made by the boat as it sails virtually against the direction of the wind.

The Courageous' nagivator's table boasts an eye-level display station mounted on hull interior. Commands are entered into the computer system with a touchpad (lower center) and calculation results appear in the plastic numerical display box (above the touchpad).

In this case, the boat moves forward by tacking – sailing diagonally back and forth. The forward progress, known as "speed made good to windward," is calculated from the instrument inputs.

The Nova can also compare tacking patterns and help establish the most efficient system of "beating" to windward.

While the calculations may seem routine for a computer, the environment certainly is not.

The cockpit, which provides barely enough room for the 11-man crew, is open to corrosive sea water and salt air – and provides no power source.

Rich McCurdy, system consultant on the installation, said he chose the 16K model Nova because it is the only computer that could be adapted for this very unusual application.

The Nova is small and light, and the design of the power supply permitted McCurdy to convert to 36-volt DC current and power the system with three standard automobile batteries.

These batteries can keep the system running for 10 to 12 hours and can be recharged each night.

The computer is housed in a weatherproof metal box that hangs beneath the floor of the cockpit. Together, they weigh less than 70 pounds. Bilge water that circulates through a battery-powered cooling system keeps the Nova cool.

The navigator gains access to the computer from a station mounted at the chart table right next to the helm. Weight and power limitations precluded using commercially available displays, so McCurdy designed a 32-channel scheme that produces a four-digit-plus-sign display.

Manual inputs and commands are entered with a touchpad, and the desired display is selected with a series of switches.

The display can also drive analog displays and a miniature strip chart recorder, mounted on the chart table, is used for trending certain variables.

The remaining piece of on-board equipment is a cassette data recorder that collects performance information for evaluation at the end of the day.

When the Courageous returns to port, the day's performance is printed out on a teletype terminal on the pier. It is also copied into a magnetic tape system.

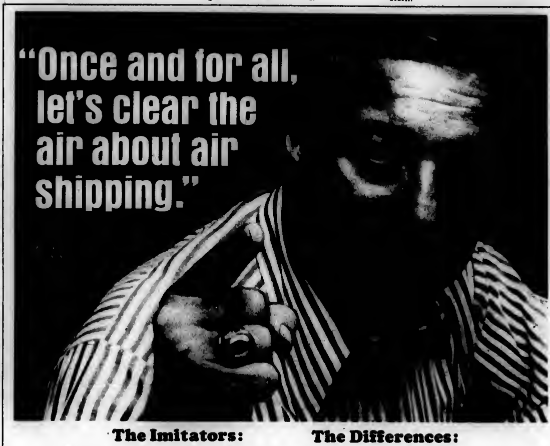
McCurdy, who noted that this is the first time some of this performance data has ever been recorded, expects the information to aid in the design of future racing yachts.

Courageous, with daily improving times, has now drawn neck-and-neck with Intrepid, the boat that successfully defended the America's Cup twice.

The top foreign challenger will be chosen from among the French and Australian entries.

The America's Cup races will begin September 10, with the two finalists competing in a best-of-seven series.

The unpretentious weatherproof box (lower center) houses a Nova 1200 minicomputer onboard the Courageous. Your view: the cockpit, looking toward the stern.



Computer Centralizes Papago Health Data

By Nancy French

Of the CW Staff

TUCSON, Ariz. – Bringing health care to Indians on a vast reservation is similar to treating the poor in urban ghettos – care is fragmented, infrequent and often without the benefit of meaningful medical records.

A prototype computer-based health information system developed by the Indian Health Service (IHS) here may change that for about 10,000 Papago Indians in southern Arizona.

The typical outpatient service unit in the IHS is composed of physicians on two-year assignments, nurses, mental health workers and contract health care agencies – all collecting records for their own use and, in most cases, not sharing that information.

Under the new IHS system, these records are being centralized with no additional workload for any individual health worker.

Sent to Tucson

Each time a member of the health care team sees a patient, he completes a three-part NCR form which is filed in the patient's record in his clinic.

A copy of that form is sent to the IHS data center, where it is coded and then keypunched onto magnetic tape via Singer key-to-tape machines.

The information is batch transmitted via telephone once daily for storage in an IBM 370/135 computer system, contracted to the IHS by Bell Aerospace in Tucson.

Complete turnaround time for updating a record takes three days.

Finally On-Line

Once in Tucson, however, the information is available on-line, in real time, in seconds to any physician who needs a patient's history for subsequent treatment. He merely requests the data through the terminal in his clinic.

The health information being collected by this doctor on the Papago Indian reservation will be batch transmitted to a Tucson computer center; when the doctor needs it, he'll be able to retrieve the data in seconds.

Since the Indian population, scattered among 50 small villages in an area the size of Connecticut, is highly mobile, this is an important element in providing effective health care, according to Dr. Alfred Garratt, management information systems chief.

Each facility – including an outpatient clinic and 50-bed hospital at Sells and outpatient clinics at Santa Rosa and San Xavier – is equipped with a hard-wired terminal with dedicated lines.

Several terminal models are now in use: the Texas Instruments Silent 700; the Computer Devices 1030 and the GE terminet.

Garrett explained that personnel in the field can retrieve health records through the same types of terminals that operate on a dial-up basis over any standard telephone headset.

Since the area has few roads or telephones, and many villages have no running water or electricity, IHS is investigating the installation of car-mounted radios for use where there is no other power source. That plan, however, is "still down the road."

The health information system now contains more than 14,000 records, collected over a three-year period, with a data base of more than 50 million characters of health information.

Overcharge Electrifies Wire Customers

By a CW Staff Writer

WASHINGTON, D.C. – An error in a computerized billing system resulted in some overcharges in June bills of residential customers with underground wiring here, according to a spokesman for Virginia Electric and Power Co. (Vepco).

An undetermined number of 2,500 Vepco residential customers with underground wiring received bills as much as eight times higher than they should have been.

An omission in the program written to handle the treatment of underground surcharges, paid monthly by each customer to reduce a one-time outstanding payment, resulted in the billing mistakes, said D.T. Herrick, director of commercial systems and programming for Vepco.

In designing the program, he said, both Management Information Services and the user department involved overlooked the effects the run would have on "interim" bills " – invoices based on estimates of power usage rather than actual meter readings.

"We don't feel the omission was a programming error, but rather a failure to recognize that an available master record field storing the one-time charge would have to serve two purposes," Herrick added.

In any case, when the balance of the one-time charge exceeded the amount of the interim bill calculated, the customer was billed the one-time charge rather than his correct interim amount.

Stressing that a relatively small number of Vepco's one million customers were involved, the company spokesman added that, since all the bills were interim notices, they did not have to be paid.

He said the programming oversight occurred when a state regulatory decision required that billing procedures be changed. The State Corporation Commission ruled that the monthly surcharge customers had been paying for underground wires should be deducted from the installation cost only until that cost is paid.

In the past, customers were given a choice of making a one-time underground wire payment or paying the monthly surcharge.

The company doesn't know how many of the bills were incorrect, he noted. Because the invoices were estimated and did not have to be paid, however, Vepco chose not to notify customers of the billing error.

The spokesman said any customer who noticed the mistake received an explanation and an apology. Those who paid the bill had the payment credited to their account.

'Stay in Car'—'Reduce Speed'

Highway Advisory System Warns Drivers of Hazards

By Nancy French
Of the CW Staff

AVON LAKE, Ohio – Drivers on two U.S. highways are getting advisories to help them avoid traffic snarls and other hazards with electronic freeway signs developed by the Massachusetts Institute of Technology and the Winko-Matic Signal Co. here.

Unlike most "computerized" freeways, where traffic flow is controlled by limiting the number of entering cars with mandatory red/amber/green signal lights, these two sign systems advise drivers to "reduce speed" – "stop" – "stay in car" – or the stadium "parking lot [is] full."

Both sign systems also have an area for displaying suggested speed limits and lane changes.

Of the two systems now in operation, the first was installed in the two-mile Eisenhower Tunnel running beneath Colorado's Loveland Pass.

The second, in Cincinnati, Ohio, is controlling one-way traffic in a spaghetti bowl of highway interchanges on a five-mile section of Interstate 75, near the city's Riverfront Stadium.

Basic Concept

Although the systems differ in complexity and cost – each location presented its own unique problems of congestion and traffic control – the basic concept is the same for both.

Traffic information, gathered through wire loops imbedded in the road, is fed to a computer where an on-line computation is made to determine whether or not new instructions should be posted.

In the Colorado system, the computer converts detector impulses into a measure of how many cars are in each of 11 sections of the tunnel.

If the number in a given section exceeds a preset limit, a Digital Equipment Corp. PDP-8E computer posts a reduced speed for that and preceding sections. It also can post any of 14 predetermined instructions.

The Colorado system can display 14 possible prewired sign messages, selectable by a 4-bit code, using 1200 bit/sec telephone line communications.

No Escape

The Colorado tunnel, just two lanes wide at 11,000 feet above sea level, can become completely blocked by a single stopped car.

When traffic backs up, there is no place for vehicles to "escape," and carbon monoxide buildup becomes a serious consideration, according to Irwin Hart, Winko-Matic's president.

Under these circumstances, drivers must be told to "turn off their motors" and "stay in their cars." Traffic from the other direction can be halted to allow motorists to pass the crippled auto and to get help through.

"If a person has a flat tire and blocks traffic to attempt to change it, that person might come out of the tunnel on a stretcher" if idling motors are allowed to foul the tunnel air, Hart said.

He estimated the cost of the tunnel sign system to have been under $1 million, commenting that the price represented only about 1% of the total cost of the tunnel – $104 million.

The Cincinnati system is somewhat more complex, utilizing two computers and free format signs which provide virtually any message.

The system is preprogrammed for 43 different conditions, using 37 messages. Advisories are posted for each condition by a character generator rather than the prewired logic used in Colorado.

A manual override on the Cincinnati system could even allow the operator to post "John Doe, please call home, if he wished," Hart remarked.

A General Automation 1830 gathers information from detectors imbedded 30 feet apart in the road. Messages are carried, one character at a time in Ascii code, over 1/2-inch coaxile cable by two-way CATV amplifiers.

The 1830 analyzes the traffic conditions, based on volume, vehicle speed and lane occupancy, and continually updates the traffic status.

That information is transmitted to a PDP-8F which matches it with the appropriate message, changing the advisory appearing on as many of the variable lamp matrix signs as necessary.

In addition to the message generating function, the PDP-8F controls all communications multiplexing functions and other communications control jobs as well.

Seven years in the development, the Cincinnati system was originally conceived as a means of guiding fans to stadium events, suggesting alternate parking when certain lots were full and shifting nonstadium traffic to alternate routes at game time.

The sign system, part of the stadium contract construction, soon evolved into an advisory directing interstate motorists to alternate routes during rush hours.

Although the system was designed to operate automatically, city and state officials have agreed to staff it with one individual to oversee the closed circuit accident monitoring system and intervene at the control panel when necessary.

...And Spokane Came To a Grinding Halt

SPOKANE, Wash. – A computer malfunction here caused all the traffic lights downtown to turn red briefly during the noon hour one Thursday last month.

No major traffic problems occurred during the four to five minute period when the lights failed to operate properly, according to Don Ramsey, a city traffic engineer.

He said the lights went red after a hardware failure in the GRI 909 minicomputer, the basis for the pretimed traffic system developed by Multisonics Development Corp.

Capable of traffic responsive logic, the system went on-line in March with 37 intersections and was expanded to include 31 more in May.

Because a software error had been discovered, the system had been taken offline temporarily, Ramsey explained. While he and other traffic engineers were entering corrected instructions, operations people inserted a wrong set of signals to the 68 downtown intersections – and all the lights turned red.

Editorials

On the Plus Side...

Three recent international conferences in the data processing field clearly show that the possibly harmful side affects of computarization are international in scope and impact.

The effect of computer use on the distribution of power, privacy and other socially relevant topics received wide attention at the Second Jerusalem Conference, Ifip and ICCC.

International focus on such issues is to the benefit of all in the DP field, since such problems are truly international in scope and since international policies will be needed if those problems are to be solved.

No nation can attack social problems today without interchange with other countries. The need for international cooperation will become increasingly more important as time passes.

All in the DP field should strive for more interaction, both between nations and between the policymaking and technical communities in their own countries.

...But There Are Minuses, Too

While international shows serve as an excellent meeting ground to discuss the "big" problems in the data processing field, they all too often neglect the more mundane, but perhaps more serious, day-to-day concerns of the DP manager.

And this is a serious weakness in their programs.

Everyone in the DP profession should certainly be worried about the possibly adverse side affects of their systems and applications, but such a concern by necessity must be balanced with discussions of solutions to real world problems.

After all, data processing is truly an international profession and solutions to problems found in any part of the world may well be applicable in other areas.

Meetings such as Ifip, ICCC and the Second Jerusalem Conference could serve better by fostering more of an exchange of ideas on problem solving along with their in-depth look at the "big" picture.

In that way they might attract more of the "grunts" of data processing as well as most of the generals.

An Excess of Sexism

Data processing is one of the newest professions in existence, yet the field is plagued with the same problems of sexism found in many of the older occupations.

Item: Though almost half of the one million people employed in DP are women, most of them are keypunch operators. Only 1% of all keypunch operators are men.

Item: "As one looks at the higher rungs of the occupational ladder, women are an increasingly smaller percentage of the work force," according to a 1973 Afips personnel report.

For example, only 21% of all business programmers and 10% of all business systems analysts are women. Similarly, only 17% of computer operators are female.

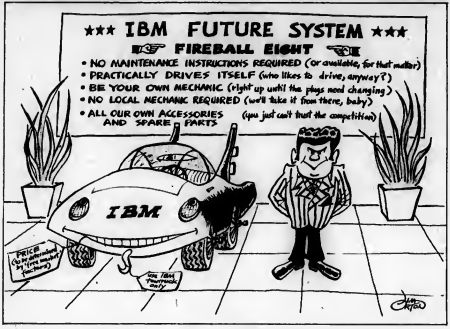
Item: Women in data processing work about one-half hour longer for $10 to $20 less pay weekly than do their male counterparts in equivalent positions, according to a Labor Department survey released this month.

That discrimination exists in one of the newest, and supposedly most forward-looking, professions is particularly distressing.

DP managers should make a special effort to increase the number of women employed in areas other than data entry and to equalize pay scales between women and men workers where there are imbalances.

Each person should be judged on the basis of talent, regardless of sex, race or creed. With this as its coda, the DP profession could enjoy the benefits gained from hiring and/or promoting the person who can do the job best – even if she isn't what you originally had in mind – rather than mimicking outmoded stereotypes.

And the first step begins with you.



Letters to the Editor

Biddle's Testimony on IBM Displays 'Serious Flaws'

I am writing to you regarding the article about Jack Biddle's testimony before the Senate Antitrust and Monopoly Subcommittee [CW, July 31].

The fact that this article appeared on page one right beside a companion piece about IBM's refusal to testify reinforces my opinion that your publication has a definite anti-IBM stance.

There are serious flaws in the Computer Industry Association's testimony. To wit:

- Mr. Biddle believes "... the purpose of the antitrust laws is to provide better products and services to consumers ..." That may be offered as an ancillary benefit but is it the purpose? I always thought antitrust was supposed to prevent one or a few companies from indiscriminately raising prices.
- Please tell me what is wrong with a company offering innovations only when it serves the firm's marketing strategy? IBM lost millions of dollars in the early years of the 360 series. The cost to its customers who could not take advantage of this technological advance was probably higher.
- The assertion that many corporate managements prefer to "stay with IBM because of its reputation" is at odds with Biddle's earlier testimony. A company whose reputation is based, as Biddle complains, on withholding innovations, pricing policies that exploit customers, employment of subtle techniques to restrain competition, resistance to industry standards, etc., would hardly receive the top management support Biddle believes is unfair.
- What in heaven's name has annoyance of a vendor's salesmen got to do with one's professional advancement?
- Most ridiculous is the assertion that IBM's complaints to top management cause DP managers to be fired. It usually takes a lot more than a vendor's allegation of incompetence to get someone fired. As a matter of fact, I have seen a lot of IBM salesmen "put on the rack" by their marketing managers because of a simple phone call from a customer or even a prospective customer.

Finally, the last two paragraphs in the article leave me in a complete quandary as to what it is Mr. Biddle and the CIA want Senator Hart et al. to do to IBM.

Richard J. August

North Kingstown, R.I.

There are Good Reasons Why IBM Has 70% of DP Business

Every week somebody is complaining that IBM has 70% of the computer business and that the best thing for everyone is to break up the giant.

I would like to offer my own views on why IBM is a giant and why these other firms have no valid reason to complain.

IBM builds an excellent product line and they do it with their own resources. The other companies wait for IBM to develop something and then copy it.

IBM provides a field engineering force that is second to none. In each location there are many people. The other companies provide poor response time and may have only one man in a state.

I would like to tell all the other firms the way to obtain 70% of the computer business. First, build a quality product, not a cheap imitation copy. Second, provide excellent service and systems support.

If these two things are done, it is possible to become a leader in the computer industry. They can be done; one has only to look at Digital Equipment Corp. to see it.

If other DP firms continue on their present course, they will fail and have only themselves to blame.

Donald W. Beatty

Springfield, Va.

Are B.A.s Really Better?

I agree with Gary B. Shelly's letter [CW, July 10] that vocational DP schools do not have adequate training on operations.

And as a student of a DP vocational school, I see a need for adequate training in programming, debugging and documentation in our colleges.

At the school I attend, there were a few students from the local college who had no idea how to debug or code properly.

I can't see why college graduates are more qualified as programmers than graduates of a DP vocational school. If a company requires a B.A. degree for employment, I think the company should check the DP ability of each applicant by comparing the grades and programming and debugging capabilities of B.A. students with vocational students.

Most of us who don't have a B.A. want one, but first we need a job to buy our books.

Dianne Blaswich

Visalia, Calif.

Kudos and a Correction

I wish to express my appreciation to your staff writer, Nancy French, for her fair and accurate recounting of the problems encountered at the New York City Human Resources Computer Center [CW, July 3].

There is one minor correction to the article, which indicated the error occurred as a result of a transmission program problem. The error was actually a result of the processing that took place after transmission, and not the transmission program itself.

Kenneth L. Brody
Director

Office of Information Systems & Services
Human Resources Administration
New York, New York

Other letters on Page 9.

Letters to the Editor

Exchange of Ideas Sought To Evaluate Performance

Computerworld, in an editorial entitled "A Welcome Performance" [June 19], touted the possible value of the General Services Administration's new computer evaluation office and the statistical guidelines which it might produce.

Many installations, I am sure, have developed their own statistical guidelines for measuring and evaluating data processing performance and effectiveness. In our own case we have for some time been using a number of basic measures which may be of general interest.

These are percentage of production jobs completed on schedule, percentage of documents rejected in optical scanning, number of unplanned IPLs per week, rerun costs as a percentage of total billable costs, errors per hundred records processed in data entry and percentage of days with long-term and short-term online systems outages.

These are recorded during the month, produced and reported on a monthly basis, and reflect the quality of the operation.

In addition, average jobs per day on the computer, average CPU time per day and average data entry records per week give us a measure of the quantity of work processed and the workload required to be handled. Productivity in data entry is measured by job and by operator and in total on the basis of keystrokes and records per hour.

It might be helpful to us and others to hear what kinds of measures people in the industry are already using.

Stanley E. Wertheim
Manager
Systems and Procedures Department
The Cleveland Electric Illuminating Co.
Cleveland, Ohio

Contrasts

Old and new, foreign and familiar, strangers and friends, large (Ifip) and small (ICCC) – this has been a time of contrasts. Stockholm itself is a beautiful contradiction: at once, a view of possible futures, ways in which very civilized people may live together, and a view of a noble and royal culture, sponsoring the arts and sciences, and now almost vanished.

We have attempted to report the facts of the two meetings: the attendance, the papers, the technical directions. I'll go the other route, talk about people and parties, about the weather and the lovely shops and the beautiful young people, and especially about old friends.

For Ifip is indeed the triennial gathering of the clans, especially the academics. Held in the summer while school is out – except in Australia and such, of course, but John Bennett and the Brazilians and Afrikaaners came anyhow – it draws the founders of our trade, the numerical analysis professors who now gum up the sessions with dull stuff but who did indeed fire up the first electronic and pre-electronic computers.

Nearly 30 people were identified who had been to all the meetings, 1959 through 1974; I was one and knew 17 of the others. Yes, lots of old-timers, but by contrast hundreds of young Scandinavians seeing the peculiar things we do through shining eyes and with excited minds.

High points for me were again contrasts: the giant banquet in the magnificent Town Hall, where the Nobel Prize ceremonies are held, and a small elegant crayfish party in a suburban home, with five kinds of aquavit and five kinds of horrid hangovers the next day!

At Ifip we were welcomed by the young king, at ICCC by the minister of communications. At Ifip, we filled the Town Hall; at ICCC, the Winter Garden of the Grand Hotel.

The international organizations were out in full force: the UN and its agencies, OECD, the Telecommunications Union and all its subsets and permutations. The industry people were less well represented: Ifip drew the professors and ICCC drew the government people.

The exhibits were well done but generally rather small (although IBM put in an entire 370/158). Moreover, during Ifip the computer medics put on Medinfo, so quite properly many exhibitors chose to demonstrate biomed applications or equipment.

But all the cultural activity of Scandinavia is not scientific; I had a memorable dinner in the Old Town with Berth Milton, a world-famous figure in the specialized publishing of a much older but even more universal subject area.

The next Ifip and the next ICCC will be in Canada, the former in 1977 and the latter in 1976. The 1980 Ifip will be in the Pacific, divided – if it proves possible, I hasten to add – between Japan and Australia, Tokyo and Melbourne. A wild and woolly concept indeed; perhaps we can charter a Concorde!

About the programs, only a word or two. I'm not really knowledgeable about data communications, and the ICCC stuff may have been less solid or less novel than it seemed – but it looked good. And there was far more attention to social implications that week than before.

By contrast, a good many Ifip papers read rather clumsily; one got the feeling of rewording and rewarming, and of the reporting of minutiae. Maybe it was me; I can't be sure until I've checked with lots of others.

Clearly, though, whether ICCC papers were good or not, the Ifip programs require much work. The organizing committee tried very hard, but the program committee did not fulfill the promises made after Edinburgh and Ljubljana.

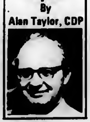
But dull papers and good, old people and new, lovely Stockholm and grim Cyprus, good international overtones and ugly Watergate climax, it was good to be with friends, good to see the sights and the smorgasbord, good to be alive!

Herb Grosch

False Pretenses?

Law's Long Arm Reaches into the Computer Area

The Taylor Report
By
Alan Taylor, CDP



One of the major excuses for poor computer practices is: "Other people have done the same thing and no one has complained." In some ways it parallels the reasons put forward by the recent Nixon administration to excuse certain practices.

But the argument is unpersuasive – in the realm of data processing as well as in the Oval Office.

One data processing person who found this out the hard way was Barry Gresh, director of a Boston programming school that has been in the news of late.

On the same day that Nixon resigned the presidency, a warrant for Gresh's arrest was issued in Boston Municipal Court on a charge of grand larceny by false pretenses. As far as I know it is the first warrant to ever be issued in such a case.

In question here is the matter that the school promised to make competent programmers out of its students, a contention that is being contested by one of its former students. He charges that the school took money by false pretense because it did not make him professionally competent.

Previously the rule of law was somewhat neglected in this area – much as it was in the case of the Presidency. Professional standards were all that were thought to apply to the running of the school in question. Its program was thought to be valid just by accreditation based on as little as a single visit in a five-year period.

But the judge was unimpressed with these general "professional" arguments, despite pleas by the counsel in the case, much as the judge in the Watergate case was unimpressed by the argument that allegedly illegal activities were okay since other presidents had done much the same type of things.

Key Question

The key question in the Gersh – or rather the DP schools – case was asked even before the warrant for Gersh's arrest was issued. (It should be noted that Gersh has only been accused and not proven guilty of any crimes.)

I am acutely aware of the question, because the judge in the case addressed it directly to me while he was considering whether or not to issue a grand larceny complaint sought by a former student and his father.

He already had some knowledge of the case. The $1,600 cancelled check covering the tuition lay on his desk, alongside the student's enrollment in a "computer programming" course and his graduation certificate.

But, as he explained later, he did not have enough evidence in front of him to issue the complaint. What he needed was enough data which, if it were to be believed by a judge at a future hearing, would indicate that grand larceny had in fact occurred as claimed.

To complete the evidence, he then asked me this question: "Is this graduate of the computer programming course qualified as a computer programmer?"

The answer is not as important as the underlying basis for asking the question, because by doing so the judge brushed away problems of professional practices and ignored any claimed authority of DP societies or trade associations to accreditation.

The rule of law, he was saying, comes before anything else and protects the newest data processing student as well as the oldest practitioner of the art.

And this whole question of the rule of law may well have some farreaching consequences in the future. Let us look, for example, at the question of privacy and the attention that will have to be given to the question by President Gerald Ford.

As vice-president, Ford was given the task of solving, in three months, the problem of privacy and computer systems. True, as we all know, Ford did not complete the task in the alloted time, but he cannot have forgotten the task either.

When he has time for it again he hopefully will review matters and will instruct his subordinates to see if there is only a single question here or whether the privacy question is in some ways a coverup impeding the needed investigation into the whole matter of reliability of computer-produced information.

Information Reliability Our Question

Currently, our standards of reliability come from "common usage," or "current state-of-the-art." This permits unreliable and even criminally dangerous misinformation to be professionally excused.

As a hardware-based operation it is not surprising that this professional laxity occurs. The hardware manufacturers are constantly changing the rules of the professional's game and the professional who will not be able to qualify, for instance, when IBM issues the FS series soon will be at a distinct disadvantage when it comes to keeping employment.

Lack of Input

As a result, there is a lack of independent advice available even to such panels as the Ford panel about reality. And there is a distinct danger that the panel will come forward with some simple reforms that will cover up the real situation.

It cannot, however, stop the criminal courts from investigating charges of obtaining money by false pretenses, which could apply to selling systems as "reliable" or as providing "accurate results" when they are not.

From President Ford's point of view, therefore, the danger in producing a quick report on the privacy problem is that, like in Watergate, the courts may sooner or later blow away any cover up that the report contains. That would expose Ford to the question of why the task was not done thoroughly in the first place.

The Paperwork Conspiracy: Cluster's Last Stand

By Miles Benson

Special to Computerworld

The Sociology of Computing

Life in a bureaucratic computing organization can be incredibly complex. Worse yet, it can be enormously frustrating. Just ask Tim Cluster.

Tim works for the government. I'm not going to tell you what part of the government, or even what Tim's name really is, because it might get him in trouble. Besides, if you substitute the name of any large company for "the government," I suspect that this story would still hold true.

The agency that Tim works for – let's call it the Theoretical Human Utilization Department (Thud) – subcontracts most of its work to private corporations. Tim's job is to monitor those subcontracted jobs.

If a computing firm is hired to build a GPSS model of the utilization of human resources in an agrarian community, Tim peers over the company's shoulder to see if the simulation looks anything like his picture of the real world.

If hardware test probes are needed to analyze the utilization level of Thud's own supercomputer, Tim oversees the installation of the probes.

If a precompiler would be useful to define a human utilization language, Tim writes the requirements and reviews the results.

Constructive Meddling

In short, Tim is paid to meddle constructively in the affairs of other companies.

This could be clean, crisp work. For a take-charge guy like Tim, it could be very satisfying work. It could also be a continuous learning experience.

Well, it's not.

It verges on all those things, but there is one fundamental problem that keeps it all from jelling: bureaucracy.

The essence of Tim's job is communication. Communication means correspondence. Correspondence means paperwork. And paperwork, Tim has found out the hard way, has a special set of procedures all its own.

For instance, last fall he received a copy of the user's guide for that GPSS program I mentioned earlier. His job was to critique it and send his comments to the subcontractor so that they could be incorporated in a final update. By the terms of the contract with the supplier, he had 30 days to review the program, generate comments and send them back. No sweat, right?

Wrong. The critique got done on time, all right. Tim had his comments down on paper by day five. By day seven they were typed. By day nine they were proofread and passed on to Tim's management for approval.

Then It Started . . .

Then the problems began. Management was pretty well jugged with other work. By the time the comments had emerged, approved, from the top of Thud's management chain, it was day 15. But even with half the time gone, things looked pretty smooth.

Wrong again.

There's an organization called Correspondence Release (CR) in Thud which is responsible for all of Thud's extradepartmental paperwork. CR people don't know anything about computing, but they care a lot about commas and semicolons.

Well, CR bled all over Tim's punctuation. His comments were red-pencilled so badly they looked like floor coverings from an operating room. In one or two places, CR had changed the thrust of his critique. For the most part, though, the changes were in form, not content.

Barely holding in his ire, Tim sent his revised comments back through the cycle. Retype, proofread, re-approve. It was now day 25. Things were getting tight. But possible.

There was one last stop on the way to the mail room door, however. Contracts needed to look at the comments. After all, they had contractual implications. They couldn't be sent out without legal review.

Well, Contracts found a problem, all right. They didn't like one of the changes CR had made in Tim's original work. Not among the commas and semicolons, but in the change of thrust. Contracts saying, "Don't change it." And Tim, nearly shouting, "It's due out!"

Would you believe the comments were finally approved, and sent out and reached the supplier? Would you believe on day 36? Would you believe that the supplier, by the terms of the contract, could legally ignore the comments? Well, they were, and they did, and they were. Ignored, that is.

Not just once. I wouldn't have told you this story if it had just been once. But remember the test probes and the human utilization language? Yep, there too.

Life in a bureaucratic organization can be incredibly complex. Worse yet, it can be enormously frustrating. Why does Tim Cluster stay on?

Because it's secure. If all those CR and Contracts people can justify their jobs, Tim figures he ought to be there forever.

Youthful Offenders Learn Programming, Save State's Money

ONLY, Tenn. – By shifting some of their data processing to the Turney Center for Youthful Offenders here, Tennessee officials are saving the state the expense of private computer services while they teach prison inmates computer skills as a means to rehabilitation.

Developed with funds from the state and the Law Enforcement Assistance Administration through the Tennessee Law Enforcement Planning Commission, the program presently trains 26 inmates in keypunching and programming, a spokesman for the Corrections Department said.

By teaching computer skills, the department hopes "to make inmates ready for steady, high paying jobs when they leave correctional institutions," he added. And because the curriculum used by the program is the same as that required for an associate of arts degree at Nashville State Technical Institute, inmates can apply 42 of the credit hours earned at Turney to the 102 hours needed for a degree.

Since recent amounts of work, particularly in the Department of Revenue, have overwhelmed the state's computer processing facilities, officials said they were forced to hire the services of outside processing companies. So the more work Turney Center inmates can process during their training, the greater the savings for the state, the spokesman noted.

Random Notes

'Data Catalogue' Revised; Now Backs Univac DMS-1100

BURLINGTON, Mass. – Installations with Univac 1100 series CPUs, working with either file structures or the DMS-1100 data base management system, can utilize a newly released version of the Data Catalogue package from Synergetics Corp.

In addition to listing data available to various users, the Univac-oriented Data Catalogue includes keywords-in-context, a query language and detailed structure reports and conversion programs which accept Cobol source statements as input to create the Catalogue entries.

The package is available in object code for $9,900, or in both source (Cobol) and object code for $11,900, from Synergetics at One Garfield Circle, 01803.

'Stack-7' Cuts 2314 Disk Space Needed for Emulated 1400 Files

LYONS, Ill. – IBM 360/370 DOS installations emulating IBM 1400 series disk files on 2314 type disk packs can cut space requirements sharply with the Stack-7 support package from General Electronics. Stack-7 increases the number of 1400 file quandrants from 4 to 7 per pack.

The new utility includes a Copy routine to convert files to Stack-7 format, a Cobol access method and linkage to 1400/360 Sort Interface program, also available from General Electronics. Stack-7 can be purchased for $750 from the vendor at P.O. Box 79, 60534.

'Symbug-A' Checks Assembler Running in CMS Environment

NEW YORK – Users of IBM's Virtual Machine Facility (VM/370) can monitor and debug Assembler programs under the Conversational Monitor System (CMS) with Symbug-A from Standard Data Corp.

The package allows the programmer to examine and change data and even patch an application program – on the source code level – at execution time.

The Symbug-A user can transfer to and from any of Standard's other debugging packages or to the CMS-supplied machine language debugging environment.

Symbug-A can be installed for a one-time charge of $7,500. Lease and rental plans are also available, the company said from 1540 Broadway, 10036.

Correction

Version 8 of Panvalet, the data file manager and librarian system [CW, Aug. 14] will run on a 32K byte 360 or 370, and its cost is $4,980 for DOS or $5,580 for OS users, according to the vendor, Pansophic Systems Inc.

Yes, You Can Move Up From an 1130

OMAHA, Neb. – IBM 1130 users working with Fortran and its commercial subroutines can simplify a shift to a 360/370 DOS environment with the Eleven Thirty Conversion (ETC) package from Consolidated Business Systems (CBS).

The package is modular and focuses on six separate areas of conversion support. Source program scanning and conversion of 1130 decimal values to their 360/370 equivalents, with automatic compiling and link-editing on the 360 or 370, is the initial part of the package, CBS said.

Data file conversion is accomplished with a parameter-driven file generator that can work with card, disk or tape input from the 1130. Creation of data files through this generalized subsystem eliminates the need for special programs to build files on the 360 or 370. All data formats (A2, A2, A3, D4, etc.) are handled, the company added.

The third element of the ETC package is a DOS job control language (JCL) creation module. It uses the same file description parameter cards as the file conversion program, with the 1130 monitor execution deck as input, and the DOS JCL necessary for execution of the converted programs is created.

Sort software is provided, CBS explained, "primarily to replace an 1130 sort marketed by another software house." It includes both a Callable and a stand-alone sort capability, and additional parameters for functions such as deletion of specified records during the sort operations.

The fifth module in the package is a file edit, load and sort facility. This is used to read data input, edit specified fields for validity, load the data onto disk and sort the file into useful sequence for later processing.

"Significant improvements" have been made in the commercial subroutines supplied in 1130 installations by the Common user group, and these are the sixth part of the ETC package. The I/O functions have, as one example, been modified to use the logical IOCS facility of DOS, the vendor said.

Written in BAL, Fortran and Cobol, the entire ETC package can be acquired for $4,750. The individual portions are available separately at prices ranging from $500 (for the file edit, load and sort) to $2,000 (for the data file conversion).

CBS can be reached through P.O. Box 6173, Elmwood Park Station, 68106.

Accounting, System Tuning

'Bacus' Aids DP Managers and Staff

By Don Leavitt
Of the CW Staff

NEW YORK – Managers and technicians working in DOS, EDOS or DOS/VS environments can learn more about their surroundings with a new version of the Booz, Allen and Hamilton Computer Utilization System (Bacus), developed jointly by Booz, Allen and the Computer Software Co.

Bacus is designed as a complete computer utilization and performance reporting and billing package, using raw job accounting data available on most IBM systems to produce a variety of reports aimed at both technical and managerial concerns. An OS-oriented version has been available for several years.

The system produces regular daily, weekly and monthly reports highlighting the efficiency and profitability of the installation's computer operations. In addition, however, the technical and operations staffs receive the feedback information they need to tune the entire system and to evaluate operations personnel effectiveness, the vendors said.

Differing from other job accounting systems in still another way, Bacus charts longterm utilization trends against projected use to permit more accurate assessment of equipment requirements. Reports from Bacus fall into four distinct areas, according to Booz, Allen: financial control, planning, service and technical support.

The financial considerations include profitability and chargeback mechanisms, while planning encompasses actual vs. projected utilization of each computer resource.

Rerun trends and testing performance are shown in the service area charts – usually manually prepared and carrying more impact than many of the computer-generated tables.

Recognizing that the accounting data captured by DOS is often more than the average user can easily digest, Bacus provides highlight reports rather than detailed reports to pinpoint action triggers. Detailed information is still available, however, to define what action must be taken and to judge the effect of the action afterwards.

The largest of the several programs that make up Bacus requires about 64K of main memory.

The system is available under two plans, The Computer Software Co. explained. If the system is "user installed," with minimal vendor aid, it costs $1,000 plus $180/mo. With more traning at first and ongoing support, the cost goes up to $1,500 plus $200/mo.

Booz, Allen and Hamilton is at 245 Park Avenue, here in New York, 10017. The Computer Software Co. is at the Seventh and Franklin Bldg., Richmond, Va. 23219.

'Logik' Adds Software Support To 'Pride' System Methodology

CINNINATI – Users can create an enhanced data dictionary of work done under the Profitable Information by Design (Pride) methodology for system design and development from M. Bryce & Associates, Inc. (MBA) with the Logical Organizing and Gathering of Information Knowledge (Logik) software just announced by MBA.

Pride itself is a detailed manual approach to building a system step by step, forcing the user to work against check lists and other control measures. The final result is a solid base but this volume of documentation nearly overwhelms some users.

Logik, intended to overcome the loss of control that can occur with too much paperwork, is a data and systems dictionary able to catalog systems descriptions as well as the more traditional collection of data names and definitions.

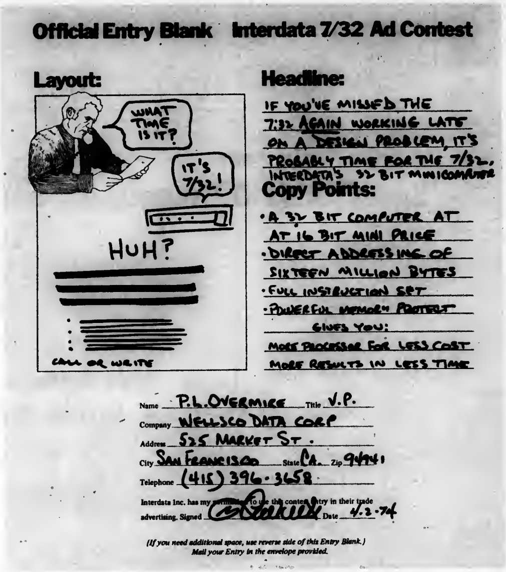
Because of its ability to work with entire systems descriptions, Logik supports the performance of systems diagnostics during the design phase, MBA noted. The system also allows a logical check of data, records, files and input/output descriptions to avoid omissions or duplications.

Logik is said to include a search feature that permits an element to be defined through an "almost unlimited number of physical and logical attributes" even when the name or number of the element is unknown.

Available only to Pride users, Logik is written in ANS Cobol '68 and can be used on any CPU that supports that language. On IBM 360/370 gear, it requires 128K of main storage and will run under either DOS or OS.

Logik can be acquired for a one-time charge of $10,000 or leased for $450/mo. A two-month trial period can be arranged, MBA added from 1248 Springfield Blvd., 45215.

“HOW I WON A FREE INTERDATA PLANT TOUR.”



Official Entry Blank Interdata 7/32 Ad Contest

Layout:

Headline:

IF YOU'VE MISSED THE 7:32 AGAIN WORKING LATE ON A DESIGN PROBLEM, IT'S PROBABLY TIME FOR THE 7/32, INTERDATA'S 32 BIT MINICOMPUTER

Copy Points:

- A 32 BIT COMPUTER AT AT 16 BIT MINI PRICE
- DIRECT ADDRESSING OF SIXTEEN MILLION BYTES
- FULL INSTRUCTION SET
- POWERFUL MEMORY PROTECT

GIVES YOU:

MORE PROCESSOR FOR LESS COST

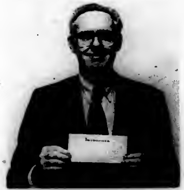
MORE RESULTS IN LESS TIME

Name P.L. OVERMIRE Title V.P.
Company WELLSCO DATA CORP
Address 525 MARKET ST.
City SAN FRANCISCO State CA. Zip 94941
Telephone (415) 396-3658

Interdata Inc. has my permission to use this contest entry in their trade advertising. Signed Date 4.2.74

(If you need additional space, use reverse side of this Entry Blank.)
Mail your Entry in the envelope provided.

“AND WHY I TURNED IT DOWN.”



Peter L. Overmire, Vice President of Wellsco Data Corporation, a subsidiary of Wells Fargo & Co., displaying the check for $1000 he received from Dan Sinnott, President of Interdata, for winning the Interdata 7/32 ad contest.

“$1000 in cash will do it every time.

You're looking at a guy who has never won anything in his life except an Orphan Annie decoder ring.

But now that I've won the Interdata 7/32 ad contest, I can honestly say it was quite a rewarding experience.

How else could I have gotten my picture on a full page in COMPUTERWORLD.

I must say it was fun entering the contest. After 20 years in the DP business I discovered it was really a snap doing a brilliant ad. How can you go wrong when you've got the industry's first 32-bit minicomputer to talk about?

I would also like to take this opportunity to thank the readers of COMPUTERWORLD who voted for me. They sure know a great ad when they see one.

By the way, if you ever get to Oceanport, New Jersey, stop in and take the Interdata plant tour. They kept telling me it was really something.”

No DP Skill Needed as...

'Spark' Plugs Wholesaler's Data Lack

TEWKSBURY, Mass. – Wholesalers in the automotive industry or in any other business in which it is important to have good, current information about stock status and expected needs can get the help they need with the Spark service now offered by Wang Laboratories' Computer Services Division.

Originally developed by Westinghouse Tele-Computer Systems Corp. and enhanced by Wang, Spark – "Shared Processor for Automotive Replacement Parts Distributors" – encompasses all accounting functions from order entry through vendor records, purchase order alerts, back-order control, trial balances, monthly statements and history of cumulative sales, by part number and dollar value.

The system is installed on a turnkey basis in each installation and no one on the wholesaler's staff has to have a DP background.

Spark accepts a wide range of customer order types – regular, pickup, drop shipment or orders received after delivery of goods – and credit memos as well. Orders are keyed in at the terminal, stored on a cassette and sent in burst mode to the Wang computer center.

The centralized CPU includes a data base for each Spark user, including the names and addresses to go with customer numbers and part numbers, price breaks by customer and by part, back-order procedures by customer and item quantities on hand. Warehouse locations for the stored parts are also in the file.

Order forms showing which items can be shipped immediately and which are on back-order are generated at the user's front office. Shipping papers, listing parts in sequence by warehouse location and by order number, are generated at a terminal in the warehouse if distance makes that arrangement more practical.

Receipts of stock are also logged into the system and users can pull a history of turnover by part on command. Reports with the same type of information can be included in the normal end-of-month paperwork generated by the system.

Cost of the system including communications lines, varies from user to user but is generally on a "line item printed" basis.

The Wang computer center is in Arlington, Mass. Corporate offices are at 836 North Street, here in Tewksbury, 01876.

New Sort for Nova

IRVINE, Calif. – Data General Nova minicomputers become more realistic tools for business DP chores with the availability of an inexpensive alphanumeric sort package from Hycom, Inc.

With the Hycom utility, there is no limit on the number of cards or records that may be sorted other than the amount of space available on one disk. The data to be sorted can be on cards, disk or magnetic tape, and the sorted output can be directed to the line printer or to tape or disk.

Records handled by the sort may be fixed or variable in length, up to a maximum 160 characters per record, a Hycom spokesman said. The data may be sorted on up to five separate key fields and a single control card is used to direct the operation.

Written in Fortran IV and Data General's Assembly language, the Hycom utility runs under the mini vendor's real-time disk operating system.

The sort can be acquired under license for $195 from Hycom at 16841 Armstrong Ave., 92705.

Source Library Has Copy Verb, Mass Edit

PINOLE, Calif. – IBM 360/370 users can revise previously cataloged source programs and copy segments from one program to another with the Sorcerer program editor from Marcus Powell Associates (MPA).

The package also supports a facility for global scanning and name changing within a program, the vendor noted.

In common with other source program librarians, Sorcerer utilizes disk space as its storage media and maintains separation of program versions so that erroneous changes cannot damage the source code of a working program. This latest librarian appears to use less main storage than others currently available.

The ability to copy parts of existing programs into programs still under development has been extended, MPA noted, to include modification of the stored card images as they are moved to the new program. Both copying and other forms of updating are done in a single pass of the source program.

The Sorcerer's ability to scan all or part of a program for particular data names, keywords or other character strings and replace each occurrence with a new string is seen by the vendor as especially useful to installations trying to update existing programs to new standards.

Sorcerer's technique for controlling undesired changes is comparable in effect though different in implementation from the approach used in other librarians. Sorcerer allows the user to limit the changes to apply to just the character string specified, set off by blanks or other punctuation.

Again, in common with other librarians, Sorcerer allows the user to limit the changes to parts of a program or to certain card columns in the source code images. Both limitations can be applied at the same time to tightly control the modification possibilities.

Sorcerer utilizes system library facilities rather than proprietary capabilities. Installable under DOS, DOS/VS, OS, or VS1 or VS2, the package requires only 14K under DOS and less than 40K under OS, the vendor said.

Sorcerer can be purchased for $4,000, or leased for $99/mo. MPA is at 2694 Doidge Ave., 94564.

Assemblers, Stimulators Support Microprocessors

SUNNYVALE, Calif. – Microtec has developed, in Fortran IV, an assembler and a simulator for each of the Intel microprocessors, the 8080, 8008 and the 4004.

The assemblers provide symbolic addressing, relative addressing, constant generation and "other features" found in typical assembly programs." The simulators enable users to set breakdowns, trace program flow and monitor simulated operations.

The assemblers are available for $500 and up, the simulators start at $650. They can be ordered from P.O. Box 337, 94088.

Independent Enhances HP MTS

BEDFORD, Mass. – An improved version of Hewlett-Packard's magnetic tape system (MTS) has been developed by York Industries to aid HP 2100 minicomputer users by providing support for the Tri-Dats Cartrifile peripherals as well as industry-compatible 9-channel magnetic tapes.

An expanded version of the York update allows the user to perform source editing, assembly, relocatable loading and program execution, all without any paper tape I/O operations.

By design, the York operating systems "look the same to the user as HP's MTS," and programs written for the minimaker's system can be used directly under York's. In fact, York said, the language processors available under the York package – Algol, Fortran and Basic – are direct carryovers from HP, without change.

The York MTS supports the storage of source code and executable programs in fixed or relocatable form in mag tape-based libraries, cutting back sharply on the need for paper tape I/O.

This improvement over HP's own MTS – "which is generally paper tape-based in fact," according to York – is particularly noticeable in the program assembly phase.

Each of the HP language processors runs in two passes. Without the magnetic tape libraries, the user had to feed paper tape through the reader twice. With the York support, an image of the original reading is stored and then retrieved for the second pass.

The expanded York package carries the program storage concept to the point of allowing mag tape-to-mag tape editing of source code before it goes against the language processor.

The basic York MTS, with Cartrifile support, is available for $350. The expanded package costs $550, York noted from 61 Dunster Road, 01730.

HP Releases Graphics Routines To Tie 2000F, Tektronix Units

PALO ALTO, Calif. – Users with 2000F or larger Hewlett-Packard time-shared systems can now work in Basic with Tektronix 4010 and 4012 CRT graphic terminals with the newly released HP 20311A Time-shared Graphics software package.

HP 20311A is a combination of two sets of subroutines, HP explained. The primary graphics support includes complete control of all terminal functions and adds graphic presentation facilities.

At a higher level, the plotting routines use the primary subroutines to draw and label graphs and scale and plot data by using simple commands which "insulate the user from any need to know detailed terminals protocols," an HP spokesman said.

With the new software, the user can create figures and rotate or expand them, produce and label coordinate systems, plot stored data in any of a range of conventions and convert scalar values.

The plotting portion of the package can produce, from the same data, line-graphs, range charts, bar charts or step charts, all appropriately labelled, he added.

The HP 20311A Time-shared Graphics package is only for the Tektronix 4010 or 4012 terminals and requires a time-shared Basic/200F system to function. The software itself is available for $500 from HP at 1501 Page Mill Road, 94304.

Low-Cost, OS-Based 'RFI' Backs Queries

ATHENS, Ga. – Non-programmers working at terminals linked to a 360/40 or larger CPU running under OS/MFT can maintain and interrogate user-definable files with an English-like query language with the low-cost Remote File Inquiry (RFI) system from Cosmic.

RFI operates in asynchronous mode allowing any number of queries (within the limits of available core) to be active concurrently. File structures supported by RFI include variable length text records as well as repeated fields, Cosmic said.

For on-line information retrieval using RFI an inquiry sentence is composed of five functional parts: (1) the function name or file identification, (2) an optional title phrase used to provide report titles, (3) the verb phrase, (4) the object of qualifier phrase, and (5) an optional sort phrase giving the capability of sorting the selected data in ascending or descending order.

For data retrieval two verbs are available: LIST which prints out the contents of a specified field in all records which meet the selection criteria and TALLY which totals a field or counts the number of records if no field is specified.

For on-line updating of records within a file, three additional verbs are available. ADD will add a complete record, including specific values for all fields listed. DEL (delete) will remove any record or sub-record meeting the criteria listed. CHG (change) will change the contents of the fields listed to the values included in the command statement.

Qualifier Phrase

The qualifier phrase for record selection allows both logical and arithmetic operators. Field values may be examined for equal, not equal, greater than, less than, and combination conditions (e.g., not less than). Both AND and OR connectives are available for compounding conditions.

RFI provides security control for all files loaded on the system. A five position code, which can be changed easily by the operator, is used to control access to each file. Separate codes can be provided for reading and updating, if required.

The RFI system is designed for the IBM 360 (Model 40 or above) operating under OS/MFT and assumes the availability of at least two IBM 2314 (or equivalent) disk drives and one IBM 2401 tape drive. Minimum core storage required totals 120K for two OS/MFT partitions.

This is expanded automatically if more core is made available to allow for simultaneous operation of more requests. The system is designed to service up to 99 Teletype or Teletype-compatible terminals in its present form. By redesign of the message control program any type of terminal using a page format may be accommodated.

Written in Level F Assembler, RFI includes approximately 20,000 card images. To show that Kennedy Spacecraft Center was the originating agency, RFI is cataloged by Cosmic as KSC-10837. The program code is available for $1,250 and the documentation for another $27 from Cosmic at 112 Barrow Hall, University of Georgia, here in Athens, 30602.

If you think all disk packs are alike, take a closer look at the BASF 1236.

Because all disk packs conform to certain industry standards, you might think they're all equal. They aren't. The important difference is the extent to which a manufacturer is willing to go in order to *exceed* industry standards. It's a matter of making a disk pack better than you really need, because there could be times when you need it. Let's look at a few superior points of the BASF 1236 disk pack:

The binder that won't quit

As you probably know, magnetic coating doesn't stick to the aluminum disk all by itself. We use a special binding agent to produce an incredibly strong bond. The disk is sealed to prevent oxidation, so you can be sure that the coating won't peel or flake off.

Our own coating process

As the trend toward higher packing densities continues, it becomes increasingly important to monitor the thickness of coating deposited on the disk. The problem is compounded by the necessity for progressively varying the coating thickness from the outside toward the inside of the disk, because packing density is greater as the circumference decreases. For those reasons, we've discarded conventional coating methods in favor of an exclusive process using our own BASF-designed equipment.

A polished performance

Following the coating operation, we use our own exclusive polishing process to achieve optimum surface regularity. We've been able to achieve a surface so flat that the possibility of a head crash being caused by uneven disks is completely eliminated. We might mention here that the coating and binder formulation, combined with coating and polishing techniques, all are important factors in achieving surface hardness, which is the ability of the coated surface to survive excessive or extended head loading.

Achieving balance

Like any rapidly rotating object, a disk pack will behave strangely if not perfectly balanced. In our precision balancing operation, any weighting required is screwed into place, which eliminates the potential of shifting inherent in a conventional adhesive weighting system.

And to make sure...

We test our 1236 disk packs to standards much tighter than those of the leading equipment supplier. If anything unpleasant should happen, we'd much prefer it happen here than on your drive. As a regular procedure, we do scratch tests to check coating thickness, impact tests to determine head crash resistance, detergent tests to check resistance to wear and temperature variations, and drop tests to make sure balance and alignment don't shift during shipment. We test to make sure our 1236 disk packs are error free.

Finally

Our 1236 costs no more than other twelve-high disk packs. You're already paying for BASF quality... you might as well have it. For more information on the 1236 or other BASF disk packs or cartridges, write to BASF Systems, Crosby Drive, Bedford, Massachusetts 01730.

You're already paying for BASF quality, you might as well have it.

Data Briefs

NCR Cassette Provides Simultaneous Recording

DAYTON, Ohio – A second Phillips-type cassette is now available from NCR for use on the firm's 260-6 Teletype-compatible terminal with thermal printer.

The 320K-character additional cassette can be retrofitted to most installed 260-6s, according to an NCR spokesman.

The dual cassette option allows simultaneous recording of data coming from a central site with off-line data capture and cassette duplication at the terminal.

NCR also announced a 300 bit/sec built-in modem for the terminal. The modem uses a data access arrangement rather than acoustic coupling, according to the firm.

The second cassette feature costs $1,250 or $45/mo; the integrated modem costs $395 or $22/mo.

Multiple Modem Signals Switched to One Terminal

CLEVELAND – Chi Corp. has introduced a Multiple Modem Switch designed to switch EIA RS-232 signals from two or more modems to one synchronous computer terminal, thus eliminating cable swapping and the risk of errors, the firm said.

Another product, the Dual Modem Eliminator, will replace two synchronous EIA RS-232-compatible modems for local applications under 2,000 feet away. Data terminal ready, data set ready and data carrier detector are all indicated, and the bit rate is adjustable from 2,000- to 9,600 bit/sec, according to the firm.

The Multiple Modem Switch, available in both two- and three-modem models, costs $250, and the Dual Modem Eliminator costs $450 with delivery in 30 days from the firm at 11000 Cedar Ave., 44106.

ACT Offers Printer, Terminal

IRVINE, Calif. – Applied Computing Technology, Inc. has a 120 char./sec matrix printer and a KSR terminal for data users.

The Model 900 printer handles 132 columns, has horizontal tab and vertical formatting and a forward reverse line feed mechanism. The unit is available with a bidirectional printhead and a high-speed tabbing capability with rates up to 330 char./sec.

The Model 950 KSR terminal includes a Bell 202-type interface for RS 232 compatibility. It incorporates the printer unit and operates at 1,200 bit/sec.

The printer is priced at $2,475 and the terminal costs "under $3,000" with 90 day delivery from 2486 Huntington Drive, 91108.

ICCC Session Told

Teleconferencing Techniques Can Halve Time of Personal-Contact Discussions

By Ronald A. Frank
Of the CW Staff

STOCKHOLM – Computer conferencing techniques can provide significant benefits over normal personal-contact conferences, according to Dr. Murray Turoff, associate director of the Center for Technology Assessment at Newark (N.J.) College of Engineering.

Computerized conferences can handle large groups, provide hard copy of discussions, preserve the anonymity of the participants and allow participants to control their time and rate of interaction, Turoff said at this month's ICCC '74.

While the effectiveness of a teleconference can be measured in several ways, it can be compared as the ratio of how many words can be exchanged in the verbal mode compared to the computer mode in a given time period. For any group which has a typing capability of one-half word per second or about 30 words per minute, Turoff said, the computerized conference becomes most effective with four or more persons in the discussion.

In such a relationship, the computer method becomes more effective and, when there are 10 people in the group, the teleconference halves the time needed to communicate, Turoff said.

When taking into account the cost and time spent by persons in travelling to and from meetings, the economics are already in favor of computerized conferences, the speaker told the attendees. And costs for this type of conference will probably be less expensive as digital networks and lower cost terminals become available.

Most business groups already have access to a computer or computer service, and interactive terminals are usually available in many businesses, Turoff said.

In addition, terminals are becoming available in sufficient numbers to allow convenient access, while the cost of postage is steadily climbing.

All these factors make teleconferencing attractive to many businesses, he added.

How it Works

When a person participating in a computer conference signs on the system with his terminal, he will first receive a list of those who sent messages into the system while he was away and he will be informed who is currently on the system.

After the participant studies the newest messages, he has the option to add opinions on subjects currently being discussed in the teleconference and he can then enter these comments into the system.

The computerized conference is structured to automatically inform all participants when a member leaves or joins the group. According to Turoff, it takes an inexperienced user about a half hour to learn how to sign on and participate in the conference.

For a group to learn how to handle a complex subject efficiently, it may take a few hours of practice, he estimated.

The teleconferencing program was developed by Turoff while a staff member at the Office of Emergency Preparedness and was written to run on any Univac 1100 series CPU. The program tape is available from the National Technical Information Center in Virginia for $300.

Another program called Forum, developed at the Institute for the Future in California, will soon be available on the Tymshare network. Several other time-sharing vendors plan to offer a teleconference capability soon.

Turoff estimates that the current program makes it possible to run a computerized conference for about $15 to $25 per hour per user. With dedicated minis, this cost could drop to about $2/hour, he said.

Future Low Cost Earth Station May Decrease Transmission Price

STOCKHOLM – Satellite ground stations that cost $100,000 or less are becoming feasible and a $10,000 ground station will soon be in reach, according to Dr. Norman Abramson, technical director of the Aloha Satellite Project at the University of Hawaii.

These stations will be able to handle at least one 50 kbit/sec transmission line, he said. When the cost drops to the lower figure, he commented, it will be possible to have a satellite transmission capability which costs virtually nothing for the land connection to the satellite link.

He contrasted this type of evolving system to the one connecting the University of Hawaii to the Arpa network via the Intelsat satellite network. Because of the limited availability of ground stations, the university's satellite link must include a 50-mile 50 kbit/sec transmission line to get to the nearest satellite interconnection point.

When prices drop, it may be possible to have a small earth station on the roof of every major building that houses a major communications user, Abramson suggested.

One of the main factors contributing to the lower cost of the projected earth stations is the increased power being built into the satellites. Because the recently launched satellites transmit a more powerful signal over a wider frequency bandwidth, reception of the satellite signal is no longer such a critical operation, he said.

In previous earth station models the receiving capability had to be much more accurate in order to pick up the narrow signals transmitted by the early Intelsat satellites, he explained.

CRT Offers Dual Keyboards

HAYWARD, Calif. – Qantel has introduced a CRT terminal for use with the firm's business computer systems.

The Model 4011 Video Terminal has a 1,728-character display and both a standard typewriter keyboard and a numerical key cluster.

The unit can transmit at 9,600 bit/sec in local environments or at 1,200 bit/sec asynchronously for remote applications, Qantel stated.

The Model 4011 costs $5,950 with delivery beginning in September from the firm at 3525 Breakwater Ave., 94545.

Selecterm System 75 Terminal Capability Mixes Graphics, Text

SOMERVILLE, Mass. – Selecterm, Inc. has introduced the System 75 data communications terminal which uses a Diablo printer and an 8-bit Intel 8008 microprocessor.

In the "text" mode the System 75 serves as a standard data terminal; in the "graphics" mode the print mechanism's proportional spacing capability can simplify text justification and formatting tasks and permits use of the system as a terminal plotter, Selecterm stated.

The print mechanism provides 30 char./sec performance, interchangeable type fonts, cartridge ribbon elements, an optional pin feed platen and optional forms tractor, according to the firm.

The terminal is also available with a full Ascii keyboard and an EIA RS-232 interface, Selecterm said.

The terminal offers switch-selectable transmission speeds of 10-, 15- and 30 char./sec. Parallel interfaces are available to support direct interface to a minicomputer.

The Selecterm System 75 costs $5,400 in standard configuration with delivery in 45 days from the firm at 59 Union Square, 02143.

Wherever • Whenever • Whatever
Dial (800) 531-5770
For Datapoint Customer Service

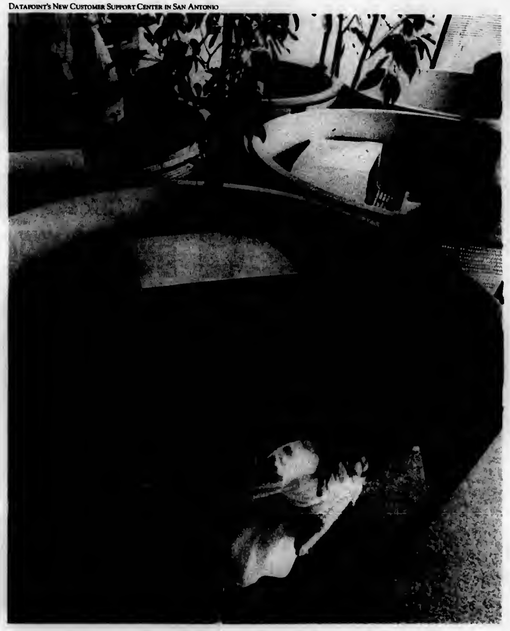
Datapoint Corporation, a leader in so many other areas of computing and communications technology, has now taken the lead in providing a new customer-oriented approach to field maintenance of Datapoint equipment. The idea is as unique as the advanced communications and computing technology, including a complete DATASHARE system, housed in our new Customer Support Center shown here, and as well-proven as the expertise, friendliness and concern for detail and punctuality our Datapoint customer support specialists show in responding to the service needs of Datapoint users all over the U.S.

Basically, what we at Datapoint have done is create at our home facility in San Antonio a central reception point for all domestic field service requests and for the assignment of our Customer Service Representatives. When you have a service request, you contact the Customer Support Center, which is staffed on a 24-hour, 7-day basis. Our pledge to you is this: within 2 hours of receiving your call for assistance at the Customer Support Center, you will have a firm commitment of a time for a field service call. Further, your request for service will be monitored at our CSC until the condition is taken care of and you have indicated your satisfaction.

With our toll-free service number (800) 531-5770 (in Texas, (800) 292-5858), our Customer Support Center is just a local phone call away from any location in the country. Our customer service specialists, especially trained for their jobs, have access via their own display terminals to a Data Bank housing service histories on more than 5,000 installations of Datapoint 1100, 2200, 3300, 3360 and 3000 systems and their associated peripherals.

On receipt of a call, a specialist can display the appropriate file on her screen in seconds to see what your installation's history has been. The terminal also displays the names and phone numbers of those Datapoint customer service representatives who can be called on to service any particular system. (Datapoint engineers are situated strategically in over 50 field locations across the country.) If a service call is required, the customer service specialist begins calling service representatives on a priority basis to arrange a firm time and date commitment. And a firm commitment will have been made within 2 hours of the initial phone call.

DATAPOINT'S NEW CUSTOMER SUPPORT CENTER IN SAN ANTONIO



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Reliability Also Better

Bank Saves 30% on Data Costs with Special Carrier

By Patrick Ward
Of the CW Staff

ST. LOUIS, Mo. – Southern Pacific Communications' (SP) microwave service between St. Louis and Kansas City costs the First National Bank of St. Louis one-third less than Bell service and provides better reliability, according to Howard Canada, supervisor of DP services for the bank.

The bank wanted a lower cost but equally reliable alternative to Bell, Canada said. United Video, since merged with SP, was then the only specialized carrier operating in the area. It quoted a price lower than Bell's but did not have lines ready at the time, he said.

The bank then leased a Bell line for four months until two lines became available from the independent carrier.

The SP link costs $400/mo, while the current figure for comparable Bell service is $600, Canada noted. "We get good response from SP and it seems that we have to call them on line problems fewer times. than we did with Bell," he remarked.

Cooperation from Bell remains good, without "any static" over use of the specialized carrier, he stated.

The two lines leased by the bank both terminate in Kansas City. One handles an on-line central information file (CIF) system for the First National Bank of Independence, which has an IBM 3271 and four 3277 Model 1s in its downtown office, as well as a 3275 in each of two drive-through branches.

Bank personnel use the terminals mainly to make inquiries about customers' current balances and to access name and address files at the St. Louis bank's computer center, but they can also update files and do routine file maintenance from the CRTs, Canada said.

Transmission is through IBM 3872 modems at 2,400 bit/sec over a local loop to SP's Kansas City microwave tower, which relays the data to a similar station in St. Louis. From there it goes to another local loop and then into the IBM 3705 front end and 1.5M-byte IBM 370/155 mainframe at the bank.

The bank also has a 1M-byte 155. Peripherals include IBM 3330 disk drives and Telex tape drives, Canada noted.

A second line leased from SP handles nightly batch transmission to Independence at 7,200 bit/sec using ICC/Milgo modems.

The bank's affiliates use 5K NCR 315 batch terminals to do proof runs and editing of balance work on data to be input to the central site. Singer 3314 key-to-tapes machines do the actual transmission of the data to St. Louis for master file updates and report generation. Another Singer key-to-tape device there transmits the reports back for printing.

Canada added that his bank has also been doing batch transmission to Rolla and West Plains, Mo. for about two years, using lines leased from Bell.

"Bell is really our only alternative" in reaching those rural sites, he said.

For one six-month stretch the bank tried C2 conditioning on these lines on the joint advice of Paradyne, their modem vendor at the time, and the local Bell representative that the conditioning might result in better transmission.

But Canada said he did not notice any difference in throughput or error rate with the extra-cost conditioning, and the bank dropped it. The bank currently uses ICC/Milgo modems for 4,800 bit/sec transmission over those lines, he said.

Merva Service Added To Transmidata Net To Monitor Orders

LOS ANGELES – Transmidata Corp. has added the Milestone Event Report/Vendor Analysis (Merva) to its previous data reception/code conversion/retransmission service for entry of purchase orders and other data.

Merva is a "bare bones progress evaluation and review technique," according to a spokesman for Transmidata, which does most of its business in the Los Angeles area. Merva's aim is to help buyers keep track of orders placed with a supplier.

To use Merva, the vendor and supplier agree on four "milestone events," the spokesman said. These may be, for example, the start of the supplier's work on the order, the point of 50% completion, 80% completion and completion of the order.

Transmidata provides the supplier with Touch-Tone pads, if needed; after reaching one of the milestones, the supplier dials up a 12K Data General Nova at Transmidata and keys in the purchase order number and the code of the milestone reached.

Transmidata's computer, which uses Control Data Corp.'s Cybernet service for mass storage, checks the supplier's daily inputs against the buyer's file.

The system prints out an exception report, listing the number of days each purchase order is off the planned completion. schedule, for each buyer. A courier delivers the reports.

Cost to the buyer company is $1/mo per item monitored, the Transmidata spokesman said.

Transmidata is located at 8820 Sepulveda Blvd., 90045.

Remote Data Entry Theme Planned for Iomec Users

SANTA CLARA, Calif. – The Iomec Users Association (IUA) will hold its ninth annual conference Oct. 17-18 in Montreal.

This year's conference includes seminars on integrating Iomec and other remote data entry/communications terminals and receivers with minicomputers and larger systems. Actual applications from the grocery/retail, credit union and service bureau areas will be presented.

Other seminars include "Distributed Minicomputer Communications Networks," "The New 'Mini-Mini'; A Look at the Microprocessor's Role in Data Communications and Peripheral Equipment" and "Interfacing the Data Communications System: How, When, Why."

Several registration plans are available; all-inclusive fees begin at $120. The conference is open to nonmembers on a space available basis.

Further information is available from Glenn Lutat, executive director of the users group, at P.O. Box 497, 3300 Scot Blvd., 95052.

Firm Finds Fingers Less Effective Than Computer

PHILADELPHIA – When Harold Powell went into business 38 years ago, he could almost keep track of inventory on his fingers. Powell bought surplus World War II electronic equipment from the government, placed it on shelves in a $10-a-month garage on the outskirts of this city, and sold the items one by one to a highly selective clientele.

It's a different story in 1974. Powell Electronics, Inc. has headquarters adjacent to Philadelphia International Airport and branches in six cities coast-to-coast. The firm stocks between 80,000 and 100,000 electronic components; annual sales exceed $14 million.

And inventory control has become one of the company's most complicated jobs.

Robert R. Carroll, vice-president of administration and treasurer, pointed out that Powell's inventory is now stored all over the country. "We have a large number of transactions each day because our business consists principally of small orders," he said.

"When a buyer or purchasing agent telephones, if you can't tell him exactly what you can ship, and when, you aren't going to get the order."

Several years ago, Powell Electronics decided to install a computer system to handle inventory control. Now each of the company's six branches has a Honeywell 775 CRT terminal. There are four more at the central site.

The remote terminals communicate at 2,000 bit/sec over dial-up Wats lines to a 64K Honeywell Datanet 2000 front end and a 128K Honeywell 2050 mainframe running under the OS/2000 operating system, according to Joseph W. Belfiore, Powell's manager of data processing.

Through the CRT terminals, the branches can make inquiries on stock in any branch enter orders for resupply and notify the central site on stock they have received.

If a customer needs something a branch cannot supply, the branch can find the stock in another company location through the CRT and have it shipped directly to the customer, Belfiore noted.

In cases where no Powell Electronics branch is carrying the stock, the branch can create a back order. The central computer compares dated back orders against each branch's inventory file on tape, which it updates nightly.

Each branch is then mailed a copy of all the reports produced, including back order shipping schedules, an open order report, a vendor purchase order report and a point-based resupply report.

The individual branches currently mail accounting invoices from their sales to Philadelphia where they are keyed to tape. All billing goes out from there, Belfiore said.

Direct Order Entry

In the future, he added, the CRTs will probably handle direct order entry, bill of materials and accounts payable applications at the remote plants.

There are about 3,000 transaction/day coming over the company's 10 HIS 775 terminals, Belfiore noted. Response time averages about three seconds. Powell Electronics plans to switch to a polled operation as soon as possible, he continued, since the company feels it would be less expensive and allow faster transmission.

One drawback to the present system, Belfiore noted, is that the dial-up terminals communicate with the CPU at four-second intervals when they are on-line.

This can seem like "an eternity" at times, Belfiore said. Polling would bring this time down to a second and a half.

As for the reliability of his system, Belfiore remarked that "we've had our share of downtime, but the Honeywell support has been good."

He has also encountered fingerpointing between Bell and Honeywell, but he described this as a universal problem for the multivendor user.

Belfiore said the total purchase price of his system came to $650,000 for the CPU, Datanet front end, 1,100 line/min printer, three tape drives, three disk drives, the 10 CRT terminals and two key-to-tape machines.

Touch-Tone Coupler Produces Signals In City Transmission

WHITE PLAINS, N.Y. – Metroprocessing Corp. of America has introduced the FT-1020P push-on acoustic coupler for use with its Fone-Tone line of portable Touch-Tone terminals.

The coupler fits only standard modern phone handsets and produces a signal suitable for data transmission within metropolitan areas, the firm stated.

The company's FT-1211U universal Touch-Tone acoustic coupler will be available for use with Trim-Line handsets (having the dial in the handset) or with older model phones which the FT-1020P will not fit. The universal coupler produces the strongest signal allowed by the tariffs, to handle extreme conditions such as long local loop length in rural areas, the company stated.

Fone-Tone terminals may be ordered with either or both types of coupler. Prices of complete terminals start at $175, with one push-on coupler.

The couplers are also available separately, for immedate delivery at $15 for the push-on type and $30 for the universal type. The firm is at 64 Prospect St., 10606.

DCA's Smart/Mux Has Bit/Sec Detection

ATLANTA – Digital Communications Associates, Inc. has added an intelligent remote multiplexer to its line of programmable front ends and concentrators.

Thy Smart/Mux offers automatic bit/sec rate detection for 10-, 15- and 30 char./sec terminals; complete character transparency; and error detection/retransmission, according to the firm.

The multiplexer can transmit data from up to 32 interactive mixed-speed terminals over a 2,400 bit/sec synchronous link to the head-end multiplexer, and dial backup capability is provided, a spokesman noted.

Smart/mux options include a remote line printer, card readers, full- and half-duplex 1,200 bit/sec terminal support, and support for IBM 2780 remote job entry terminals.

A host-end Smart/Mux can handle up to six remote-and multiplexers, the firm stated. A typical system with 24 ports costs $18,400.

Delivery is 60 days from the firm at 2801 Clearview Place, Suite 400, 30340.

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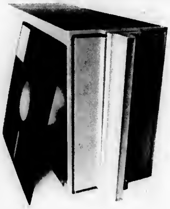


CALCOMP

Mini World

Two PDP-11 Drives Double Mini's Capacity

MAYNARD, Mass. – Digital Equipment Corp. (DEC) has added a disk and a tape drive for the PDP-11 that features twice the data sorage capacity of previously available units.

The minimum configuration of the JRP04 moving-head disk system consists of a controller and one 44M-word disk drive. Each system is expandable to more than 350M words with up to seven additional disk pack drives.

Average head seek time is 28 msec and average latency time is 8.33 msec. In addition, the RJP04 has a transfer rate of 2.5 µsec/word.

The RJP04 also has a phase-lock-loop clock system and a modified frequency modulation technique to insure that reading and recording are reliable. Error detection and correction hardware have been incorporated within each disk drive to increase data reliability, DEC said.

Available with the RJP04 is a dual-access hardware option that allows sharing of up to eight disks by two different control units connected to the same or to two different processors.

The base price of the RJP04 is $32,000 with additional drives priced at $25,900 each.

Tape Drive

In addition to providing a storage density of 1,600 bit/in., the TU16 tape drive has a data rate of 72 kchar./sec.

The TU16 has a 1,600-bit/in. phase-encoding self-clocking feature that is not dependent upon precise alignment of data on the tape. Also, tape error problems are minimized by a "watch dog timer" feature that permits the system to recover from areas of bad tape, DEC said.

The TU16 is priced from $8,500.

High-Speed ALU Speeds Up Interdata 7/16

OCEANPORT, N.J. – A high-speed arithmetic logic unit (HSALU) from Interdata can improve all standard execution times on the 7/16 mini by one third or more, according to the firm.

The HSALU provides hardware floating point, signed multiply/divide, list processing and privileged instruction detect.

Manipulates Circular Lists

The attachable unit is priced at $4,900.

A register-to-register load can be processed in .76 µsec as compared with an execution time of 1.5 µsec for the basic processor without the option.

The list processing feature provides the capability to manipulate circular lists with up to 255 half-word slots. The user can specify as many lists as required and address them by symbolic name. Parameter words indicating the number of slots in the list and the number used are automstically updated and maintained as the lists are used.

The privileged instruction detect feature monitors every instruction prior to execution and traps any privileged instruction as illegal.

The attachable unit is priced at $4,900 from the firm at 2 Crescent Place, 07757.

CMI Offers Add-On For Lockheed Mini

BEDFORD, Mass. – An add-on memory system that can reduce the cost of expansion memory by up to 50% for users of Lockheed MAC-16 minicomputers is available from Cambridge Memories, Inc. (CMI).

The Expandamac-16 is available in increments of 8K 16-bit words up to a maximum of 64K words.

Expandamac-16 duplicates the operating performance of standard MAC-16 minicomputer hardware, according to CMI. It uses core memory storage elements on plug-in memory boards.

Cycle time is 1 µsec. Parity bits and memory protection features are optional features.

Pricing by Increments

Pricing for the first 8K memory module, which includes an enclosure capable of accommodating additional 8K memory increments up to the maximum 64K capacity is $4,225. Additional 8K memory modules are $1,650 each.

This pricing level, according to a CMI spokesman, offers MAC-16 users minimum savings of 25% on expansion memory for an 8K-only add-on configuration with enclosure. At an expansion level of 16K, savings of 50% are obtainable, he added.

The firm is at 12 Crosby Drive, 01730.

32-Channel Multiplexer Good for Sampling Tests

WOBURN, Mass. – Data General Nova users can get up to 32 channels of multiplexer control that contain a high-speed sample and hold, analog-to-digital converter and program interrupt I/O interface.

Available from Adac Corp., the board plugs directly into one slot of the mini and allows for a channel-to-channel sampling rate of 100,000 sample/sec.

The Model 500-DGC is priced at $1,800 for a 16-channel version from Adac at 29B Cummings Park, 01801.

For On-Line Communications

Bank User Upgrades B500s With Varian Minicomputer

By Vic Farmer
Of the CW Staff

PLACERVILLE, Calif. – One of the biggest problems for users who want to keep their small second-generation computers, such as IBM 1401s or the somewhat comparable Burroughs 500s, is what to do to make on-line communications practical.

Today's on-line standard and requirements are severely restricting the I/O operations of these older machines, users have found.

Robert Gray tackled this problem head-on at The Mother Lode Bank here and came up with an interesting answer: two B500s with a Varian 620L minicomputer acting as a communications controller.

Separate Systems

There are two completely separate B500 systems at the bank. One has a 1,000 line/min printer, 100 card/min card punch, 800 card/min card reader, magnetic ink sorter reader, four 7-track tape drives and two disk drives with 38M characters of storage.

The second smaller system has a 450 line/min printer, 200 card/min reader and one tape, but both systems share the disk simultaneously.

One B500 is dedicated to handling the incoming inquiries and status changes from the bank's 10 branches through the Varian and terminals, while the other system is assigned batch jobs. The Varian can be switched to either processor and, since they share a common disk, it makes no difference which system is handling the inquiries, Gray said.

Both systems can simultaneously handle batch jobs and the inquiries will interrupt one system as necessary. The bank handles about 2,700 inquiries a day, as well as up to 400 routine messages.

Experience Counts

The system at Mother Lode was not the first minicomputer front end Gray had engineered. "I got the idea for this architecture in 1967 and I had it on the air at an 11-branch bank in Indiana in 1969. It's still going strong there.

"I originally started off using the Burroughs communications equipment and it just killed us. We couldn't work it so I started working with Varian on this type of arrangement in 1969.

"Burroughs, of course, has a lot of new equipment, but nothing that will do what this mini can," he said.

Gray identified the communications problem as the only problem with the B500s themselves. The CPUs are character-based machines with very small memory (19K characters) and a speed of 6 µsec. Instruction execution time is "terribly slow, but for banking-type work where you are not doing a lot of internal-type processing they are ideal," he said.

He's Still Thinking

But Gray isn't satisfied with just using the minicomputer as a front end to 50 banking terminals.

"We have plans to expand on the use of the mini . . . with the addition of a Vermont Research removable head disk with a capacity of 50M to 100M bytes. This would allow us to replace our Burroughs disk system altogether at a considerable decrease ($100,000) in price," he said.

Along with this change Gray will upgrade the Varian 620 to a larger and faster Varian V73 because the 620 can't accept the high transfer rate of the Vermont disk," he said. The V73 will have 16K of core.

500% Savings

"By using our minicomputer as a communications controller for our two B500's we avoid paying approximately five times as much for our central computer," Gray stated.

Basically the computer circumvents the older B500s' limitation of communicating with its peripherals in short word lengths (28 characters) and, as a result, eliminates excessive time devoted to housekeeping as contrasted to computing.

Because of the 28-character limitation, the average message was formerly interrupted seven times for a total of approximately 20 seconds for collection of data from disk files.

With the minicomputer handling communications between the B500s and video display terminals, only one interruption to the host computer is required at the end of each inquiry. It consumes three-tenths of a second regardless of the character length of an inquiry, he said.

"Before the mini was interfaced with the B500s, 1,200 daily inquiries and numerous status requests required almost 10 hours of CPU time. Now, with over 2,500 inquiries per day, we use only 63 minutes of CPU time," Gray said.

The mini retrieves required programs and data for an inquiry from the B500-controlled disk files, formats the message for video display units and buffers the result on a drum. The B500s are then free to resume previous jobs or new jobs while the mini transmits data to requesting terminals.

Communicates With Branches

Data communications between the bank's computers and the terminals at its branches are sent over private, or dedicated, voice grade lines leased from the telephone company. Interbranch messages, switched and controlled by the

(Continued on Page-22)

Bank Upgrades B500s With Varian Minicomputer

(Continued from Page 21)

mini, ride for free instead of incurring excessive long distance phone bills.

Up to 16 terminals in the bank's system can be accommodated on a single phone line. By employing frequency division multiplexing, each terminal is allocated a subsection of frequencies 170 Hz wide. Polling is not necessary, and terminals are never in contention for lines, he explained.

Remote Inquiries

Remote inquiries may be made either on a single account basis or on a customer profile mode; the latter generates data from all accounts making up a customer's relationship with the bank regardless of the number of branches.

Nonmonetary status inputs from terminals, such as new accounts, changes of address and holds on passbook loans, are validated through a computer program to minimize any input errors. The series of checks an inquiry must pass for acceptance by the computer includes valid account numbers, dates, etc.

When using the data communications system for interbranch messages, personnel at the initiating branch key in a code representing the receiving video display unit. The mini identifies the sending branch or office and switches an audible alarm on the receiving video display unit to alert personnel to the incoming message.

A hard copy option for message displayed is available through a teletypewriter operated as a slave to the video display units.

More Plans

Gray is also planning to tack on a data entry system which he is designing from the ground up.

"We're using keypunches and a couple of Mohawk 735 key-to-tape units to prepare data at the main office, and our aim is to replace them with a data entry terminal-based system operating with the mini. Programming the mini for a key-to-disk task will be no problem." In fact, he classified the task as "quite trivial."

Reentry Program

Gray is currently also working on a reentry program for documents that rejected from the magnetic character reader attached to the B500.

"We are manually punching cards to reenter the data now, but it's an interesting thing that almost 60% of those rejects are rejected because of problems in fields other than those that we really need . . . We are going to take this rejected data, display it on a CRT terminal and correct it for reentry," he explained.

The bank is using Ann Arbor 204 and Design 3 terminals.

The bank currently has a 61K-word Vermont Research drum and TriData Model 20 Cartrifile tape drives on the 620. These tape drives will be the main medium for storing input data for later entry into the B500s for both the data entry system and reject reentry system.

Bits & Pieces

LGS Plotter Reaches Speed of 22 In./Sec

SANTA CLARA, Calif. – The LGS-14 plotter from Logic Systems has the ability to use either standard 14-7/8 in.-wide printer forms or roll paper.

The plotter is programmable to speeds of up to 22 in./sec, and increment step size is switch-selectable from either the panel of the plotter or remotely from the host computer.

Designed to use an X-Y plotter interface and standard incremental plotting subroutines, the unit is capable of using ballpoint, fiber tip and liquid ink pens. The LGS-14 is priced at $8,500 from the firm at 3520 Victor Ave., 95050.

Pioneer Multiple Output Supplies Mini Power

SANTA MONICA, Calif. – Pioneer Magnetics, Inc. has brought out an 800 watt uninterruptable multiple output power supply for minicomputers.

Called the Model PM 2478, the unit can operate normally over an input range of 90-130 VAC with power dropouts up to 20 milliseconds in duration. Beyond that point, the device automatically switches to battery operation with no changeover effect on the computer, a Pioneer Magnetics spokesman said.

Optional features include remote sense and power fail warning signals. The unit is available in a standard 19 in. rack panel configuration or may be packaged to fit custom OEM requirements.

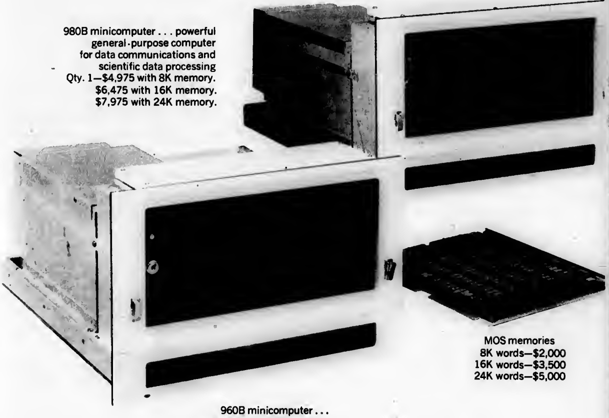
The Model PM 2478 costs $895 in quantities of 100, with delivery in 150 days from the firm at 1745 Berkeley St., 90404.

Reader Weighs 2 Pounds

STRATFORD, Conn. – National Microsales' $25 microfiche reader weighs two pounds and can operate on 110 VAC. The reader measures 10 in. wide by 7 in. deep.

For $5 extra it can be used with 12 VDC through an automobile cigarette lighter.

National Microsales is at 45 Seymour St., 06497.



DEC Builds 5 Lab Systems Around PDP-11

MAYNARD, Mass. – Five new laboratory computer systems priced up to 37% below the firm's currently available configurations have been announced by Digital Equipment Corp. (DEC). The systems are designated Declab-11/10A through 11/10E.

All of the systems are built around DEC's PDP-11/10 minicomputer and are specifically designed for a variety of laboratory applications. Features can be added to each Declab-11/10 system after it has been installed enabling laboratory data systems to grow to meet increasing demands of laboratory needs.

Programs for the Declab-11/10 family are developed using DEC's Laboratory Applications-11 library, a package of application "modules." These modules are designed to give the experimenter program elements he requires to build a compact and speedy computer program tailored to meet his specific needs.

Modules are subdivided into five major categories: data processing, data display, data analysis, data acquisition and interactive dialogue. The library can be used in conjunction with DEC's RT-11 operating system or Caps-11 cassette programming system.

The Declab-11/A, the lowest-priced member of the family, is a starter system that uses punched paper tape as a medium for programs. The B member offers magnetic cassette storage and the D member adds a cartridge magnetic disk drive for storage of a larger volume of programs and data.

The Declab-11/10 has only magnetic cassette storage while the E member adds a cartridge disk drive.

In addition to the RT-11 and Caps-11 software systems, both Basic/RT-11 and Fortran/RT-11 compilers are available for the Declab-11/10 family with disk storage as options. Basic/RT-11 is a fast incremental compiler with additional features beyond those of Dartmouth Basic, according to DEC. Fortran/RT-11 is a full Ansi-compatible Fortran IV compiler.

System prices begin at $11,495. For nonprofit institutions there is a $1,000 discount available on the Declab-11/10A, B and C; a $3,000 discount is available for the Declab-11/10D and E.

Declab-11/10

Newspaper Puts ECRM Scanner On Ad, Billing Duty

EDMONTON, Alberta – The *Edmonton Journal* has installed system software which expands its optical character recognition (OCR) device into the newspaper's business office.

With the software, a Model 5200 Autoreader scanner, manufactured by ECRM, Inc., is able to process ad text for a 40-page classified section and simultaneously produce business office data on classified ad billing and schedules.

"We now process 1200 to 1500 classified ads a day through the OCR," said W.G. Ames, production manager for the *Journal.* "And we get output in one pass for both the typesetter and the business office.

W.G. Ames looks over processing of classified ads and news copy through the newspaper's ECRM Autoreader scanner.

The 184,000-circulation daily *Journal* processes the classified ads with software developed by ECRM called Form-scan.

Form-scan enables the reader to scan forms containing up to 63 data fields, or sections of a page.

The OCR reader in one pass scans a single form which contains the billing and insertion schedule information as well as the text of the classified ad.

The Form-scan software then generates properly coded output to both the phototypesetter and to an IBM 1130 computer used by the business office.

In operation, Ames said, "the ad as well as the billing and insertion information is taken over the phone, and the form is typed up on a Selectric typewriter, which can be scanned."

"Then the form goes to the data center where it is scanned by the OCR reader which produces the properly coded paper tape for the typesetter and the computer," he said.

Data Base Set Up for Fertilizer Shipping

MUSCLE SHOALS, Ala. – A Tennessee Valley Authority (TVA) installation here has plans to make a railroad shipping charge data base available on a time-shared network to users in the fertilizer industry.

The TVA's National Fertilizer Development Center here has already developed a least-cost formulation program for fertilizer manufacturers that is available on the GE Mark III and the Control Data Corp. Cybernet networks.

Called Form-U-Share, the program is linear and generates several kinds of least-cost and other reports for fertilizer manufacturers, according to Norman Hargett, fertilizer distribution analyst at the TVA installation. The program is written in Basic but will soon be available in Fortran IV.

TVA began developing these systems on a time-shared net, either to meet its own needs or on Environmental Protection Agency (EPA) contracts, explained John I. Bucy, an agricultural economist at the center. Once work began, the agency recognized the value of setting up the programs as a resource for other users, he said.

"Interest today is mainly from large companies," noted Dr. Jon Nevins, a TVA agricultural economist, but "the exciting potential to TVA is that, should such national systems be developed, they could be made available to even the smallest fertilizer company."

TVA offers use of the Form-U-Share program through its field programs or directly at cost plus 25% overhead charge, Hargett said. The agency is also considering making the actual programs available for a company to run on its in-house computer.

Conducting Market Study

The TVA group is currently doing a marketing study for the EPA to evaluate the feasibility of marketing sulphur byproducts from fossil fuel-fired power plants to fertilizer producers.

For the study, the TVA is considering freight costs between fertilizer factories and the 600 such utility plants east of the Rocky Mountains to determine if the utilities could be as economic a material source as chemical suppliers in a given area, Hargett explained.

A "Rail-Toms" program now under development will be the data base for generating rail rates between different points for different products used in the fertilizer industry.

The Rail-Toms data base already contains rate information for shipments of most fertilizer products originating from Muscle Shoals to various parts of the country, he commented.

The Rail-Toms and power plant railroad systems will share a data base that could generate "literally hundreds of thousands" of different rates accurate enough for planning, he added.

Users could use this data base for their own marketing studies, including a clearer evaluation of the cost of a tradeout agreement with another firm in another region. This is an agreement in which each firm supplies a nearby customer of the other firm to save transportation costs, Bucy noted.

The key to weighing such tradeouts, Bucy explained, lies in knowing in advance what transportation costs really are. For many users, he said, "these costs have been a maze of confusion out there."

He also commented that the TVA's transportation cost data base has a better chance of success than other groups' efforts since it focuses on the products of a single industry.

Pilot Program Tracks Army Gear

FORT HUACHUCA, Ariz. – Computer Sciences Corp. (CSC) has delivered a pilot computer program that will make it easier for the U.S. Army to keep track of the ever-changing configuration of equipment packed into Army communications facilities nationwide.

Dubbed the "Technical Control Facility Site Data Baseline Pilot" program, the CSC-designed program is stored in an Army computer and records the effects of equipment changes, producing a list of equipment and circuit assignments that reflect the layout of each technical control facility (TCF).

The detailed information provided by the computer eliminates the need for Army engineers to make the traditional "site survey" to inventory changes in circuits, message channels and new equipment.

That survey procedure took 30 to 90 days at a cost to taxpayers of $20,000 or more.

The new computer program permits a constant updating of the operating equipment inventory as new components are added or older equipment replaced at a TCF station.

The data base developed for the program includes detailed engineering information on the communications circuits connected to each site, station equipment, power sources, air conditioning and heating capacity, transmission interface equipment, signal conditioners, the location of cables and their connections and a guide to the "subscribers" who receive service through the individual TCF.

The updating system utilizes a logging procedure. Changes in a facility's operating configuration are logged each month into a "site survey manual" and returned here.

The changes then are entered into the computer and each facility's status is updated automatically by the program. A new set of current status records is then printed out and distributed to each site.

CI Notes

Sperry Univac Reorganizes

BLUE BELL, Pa. – Sperry Univac has announced an organization and management realignment of its worldwide development and manufacturing operations, under Group Vice President Paul J. Spillane.

The Systems Division, directed by Richard L. Gehring, has been organized to develop, acquire and produce computer hardware and software systems. This centralizes operations formerly performed in four locations here and abroad.

The Peripheral Division will develop and manufacture peripheral devices, controllers and subsystems for Univac Systems and certain OEM markets. This division, headed by Albert B. Meuleners, will also supply components to all Sperry Univac operations.

The Communications and Terminals Division, under Donald E. Edam, will continue its current organization, charter and reporting relationships, according to a company spokesman.

Percy Bill Still in Limbo

WASHINGTON, D.C. – Legislation to permit multiyear leases of up to 10 years between federal agencies and computer manufacturers is still in limbo, with no date set for Senate action.

The bill, introduced by Sen. Charles H. Percy (R-Ill.), permits the GSA to expand the use of multiyear leases through its automatic data processing fund [CW, April 10].

Held up because of simultaneous consideration of privacy legislation, the bill has become "a victim of circumstances," according to a staff member of the ad hoc Senate Subcommittee on Procurement.

Supershorts

Prime Computer, Inc. has formed a wholly owned subsidiary, Prime Computer GmbH, to market its line of small-to-medium computers in Germany. The firm has also appointed Binary, Inc. as its distributor in Japan.

– – –

Cyphernetics Corp. has expanded its computer graphics services to provide software support for the Tektronix 4014 video display terminal.

– – –

Arthur D. Little, Inc. is sponsoring a conference on microprocessors, Dec. 2-3, at the Sheraton Boston, in conjunction with the New York Management Center.

– – –

Dataproducts Corp. has received a $3 million contract from Burroughs Corp. for 64K word by 69 bit and 131K word by 69 bit computer memories.

To Reach $13 Million by '79

Factory Automation Seen Doubling

By Patrick Ward
Of the CW Staff

NEW YORK – A combination of the industrial user's need for better productivity and tighter control coupled with the declining costs of minicomputers and microcomputers will double the factory automation market by 1979, according to a Quantum Science Corp. report on "The Intelligent Factory: Cost Justification Breakthrough."

The total factory automation market, including computer-aided manufacturing (CAM) products, computer-aided design (CAD) products and devices for factory data processing (FDP) will grow from $653 million in 1974 to $1,325 million in 1979, and to $2,074 million in 1984, according to the report.

The term "factory automation" as used in the report is limited to discrete unit manufacturers in the metalworking industries, as opposed to the continuous process industries. The term covers the range of equipment and services industry users to perform and design production, materials handling and control tasks.

Factors Justify Cost

Manufacturers will increasingly turn to computer-controlled equipment, the report notes, because of the growth in demand for metal products and the need for productivity gains to offset rising labor costs. Shortages of machinists and other skilled workers is another factor, the report stated.

Manufacturers must also deal with environmental and safety legislation requiring new equipment, better working conditions, improved monitoring and product traceability, the report continued.

And factory management wants systems which give it the control to optimize yields, cut errors and improve utilization, the report noted.

In combination with these factors, the lower costs of minicomputers and microcomputers have created the cost justification "breakthrough" mentioned in the report's title.

CAM Will Triple

CAM, the largest of the factory automation markets, will nearly triple from $494 million in 1974 to $1,439 million in 1984. Numerically controlled (NC) machine tools are included in the CAM in this category, as are robot devices, automatic test equipment and machine monitoring, facilities monitoring and communications products.

The reduced cost of controls and larger production lots will cut NC machine tool costs by an average of 4% annually, while labor costs will rise over 5% each year, according to the report.

CAD is the fastest growing factory automation area and will expand from $46 million this year to $425 million in 1984.

CAD helps alleviate the continuing shortage of designers and draftsmen, the report notes. It allows repeatability and consistency in these functions, since a processor controls the output of plotting boards and displays.

Factory data processing, already a well-exploited market, will grow from $113 million to $184 million in the next decade, according to the report.

FDP includes factory data collection hardware but does not include machine-monitoring computers. Card readers, badge readers and other data collection terminals are included along with central processors and their peripherals.

Software accounts for the major growth in this area and the value of software packages from vendors and independents will double to $36 million in 1979, the report noted.

The report outlines several key technological trends that will occur through 1984 factory automation:

- "Intelligent machines" – those with enough computing and memory capability to make decisions in response to sensory information in their environment – will become increasingly used.
- Future factories will tend to consist of integrated systems controlled and monitored by computer hierarchies.
- Design, tooling, fabrication, assembly, quality control, testing, packaging, materials handling and receiving and shipping functions will be included in these systems. Automated waste sorting, salvage and disposal will also be feasible.
- Sensors will increasingly measure force, torque, pressure, heat, sound and light, then feed this information into the computer hierarchy.
- And production planning, scheduling, work-in-process control, inventory control, quality reporting and other DP functions will also tie into the hierarchical computer system.

The key to sales of factory automation systems will continue to depend on systems support, including systems planning, programming, training and maintenance, Quantum reported.

Calif. Committee Approves Bill Restoring Teale Center Funding

SACRAMENTO, Calif. – The California Assembly Ways and Means Committee recently took the first step towsrd restoring Department of Motor Vehicles (DMV) DP work formerly under the jurisdiction of the Teale Center and returning some of the center's funds that were cut in the latest budget.

A bill approved by the committee provides $3.9 million in additional funding and transfers to the Center $6.4 million previously allocated to DMV to handle its own DP needs.

Of the $3.9 million, $2.1 million is to complete the DMV conversion and $1.8 million to restore some of the funds cut in the previous budget.

The first budget for 1975 slashed funding for the Teale Center to $11.5 million from the $23.5 originally proposed. IBM, the prime contractor for the center, failed to complete conversion of DMV work by July 1, as promised in its proposal.

The bill includes an amendment calling for a list of five performance specifications for IBM-provided equipment, including 95% of terminal responses within three seconds, 100% system backup, file security and the completion of the current day's work in not more than one day.

The committee also passed an amendment requiring IBM to provide, at no cost to the state, any additional CPUs that might be needed above the two 168s bid by IBM unless the state changes specifications in the IFB or the need can be attributed to increased workload, sources said.

The original IBM bid specified the two 168s would be sufficient for five years and would allow for a 50% increase in growth, the sources commented.

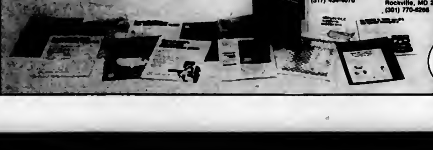
Industry Offers Poor Relocation Benefits

NEW YORK – The computer and business machine industry offers few relocation benefits compared to other industries, according to a study by Dun & Bradstreet.

The nationwide study showed that major U.S. corporations transferred approximately the same number of employees in 1973 as in 1972.

In the computer/business machine industry, however, 24% of the respondents said they transferred fewer employees in 1973, compared with 16% of the total sample.

In the computer industry, the report stated, the policy that an employee must arrange for the sale of his own home and is reimbursed for some or all of the expenses involved seems to prevail. Only 12% of the industry companies use home-buying services as opposed to a national total of 21%, the study showed.



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192 Increments Popular

135, 145 Penetration Planned

STAMFORD, Conn. – IBM 370/135s and 145s should provide the largest penetration potential for independent add-on memory makers, according to Richard L. Belschner, product marketing manager for CIG Computer Products, Inc.

Independents now have about 14% penetration of the 370 add-on market, most of which is in the 155 and 165 area because those machines have been installed the longest, he said.

However, the 135s and 145s should provide an even larger market, he noted.

Of orders received by CIG for 145 add-on memories, most require 256K increments, he said. The next most popular is in 512K chunks, followed by 384K.

For the 135s, most users order 192K increments, followed by 256K segments.

Most 145s with add-on have a total memory capacity of 512K or 768K, although there are machines with up to 2M bytes, he noted.

As of December, 1974, Belschner said, the expected average memory size of a 135 will be around 230K and the 145 about 450K.

The 155 should run about 1,300K and the 158 around 1,500K.

Although part of IBM's heralding of virtual memory was that it would eliminate some need for additional memory, CIG's figures do not bear this out, with the 158s expected to have more real memory than the nonvirtual 155s.

No Push on 158s and 168s

CIG is working on memories for the 158 and 168, but Belschner noted that "it is not a big enough market for us to push to get it out." He said, however, the market should grow tremendously this year.

Belschner's figures show that, as of Dec. 1973, there were about 147 of the 370/158 CPUs installed, and that number is expected to reach about 700 by Dec. 1974.

IBM offers a lot of memory on the 158, he noted.

In addition to a market that is just now assuming sizable proportions in the number of installed CPUs, a product needs competitive prices, Belschner said. Memory on the 158 and 168 will probably be 4K n-channel, although first units might be shipped with 1K chips in order to expedite market penetration, he commented.

Prices of memories have "bottomed out for a while" until the yields on n-channel devices get higher.

CIG, he noted, now sells its bipolar units at n-channel prices in order to gain a price advantage.

The company will soon ship n-channel memories on memories for 135s and 145s, he said.

The growth of the 135 and 145 market for the independents is seen as a good sign by other industry marketing men, since the independent market has slowed considerably from the time of its greatest penetrations and sales into the 360 marketplace in the late 1960s and early 1970s.

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Diablo Has Faith in Floppies

HAYWARD, Calif. – Undaunted by the prospects of some fallouts in the floppy disk field, Diablo Systems, Inc. is throwing its hat into the arena.

Diablo plans to announce product specifications on its IBM-compatible unit in October or November, when it will have units ready for customer evaluation. Product shipments are planned for the first quarter of 1975, said Tazz Pettebone, disk product manager.

The floppy drive area "seems to be a very viable marketplace," he said, adding "not everyone in it is well-financed."

Suppliers 'Hungry'

Pettebone admitted he expects some fallout among present suppliers, which could come before the end of the year. Competitors who don't appear to be working on reasonable profit margins are "hungry" and will probably fall out, he said.

"It will take a sizable company to stay in that market and Diablo has the ability to get in there and stay," he remarked, referring to Diablo's ability to draw on resources from its parent firm, Xerox.

Diablo's delayed entry enables it to incorporate some of the newer developments while other manufacturers are having to redesign, Pettebone commented.

"Even though we're coming in late, we'll have the latest technology built in," he said.

Diablo's drive will have a ceramic heed, which will initially be made in-house.

"The standard, up until the ceramic head, was a stainless steel shoe. Most of the head manufacturers had tooled up for that, and they are all regrouping to come out with the other head," he said.

"Since we have our own facilities we've been able to react to that in our own design very quickly, rather than waiting for availability from outside sources."

Diablo is, however, evaluating heads from outside sources as its head facility has limited production capability, he noted.

Adapso Sets Theme For 41st Conference

NEW YORK – The Association of Data Processing Organizations (Adapso) will hold its 41st management conference at the Waldorf-Astoria Hotel here Oct. 23-25 in conjunction with the group's 14th annual meeting.

The program theme is "Management, Marketing, Manpower – The Tools for the Continuing Growth of the Computer Services Industry." The program chairmen are Oscar Schachter of Advanced Computer Techniques, John Lewis of Datatab, Inc., Burt Grad of IBM and John Christiansen of Independence Computing & Software.

The conference will examine issues of privacy and security, the challenges of multinational operations, the continued competitive aspects of the minicomputer and the heightened revolution in date communications, according to Adapso.

The registration fee for members if $110 and for nonmembers $175. Adapso is at 210 Summit Ave., Montvale, N.J. 07645.

Wema Membership Up 10%

PALO ALTO, Calif. – Membership in the Western Electronics Manufacturers Association (Wema) is 10% greater than last year, according to the 1974 Wema Directory, which lists 714 company members in addition to more than 100 associate members.

It also includes a geographical cross-index of companies.

The directory costs $26.50 from Wema at P.O. Box 11036, Station A, 94306.

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- **STRUCTURED DESIGN**

This course is an introduction to a new technology for specifying in advance all of the pieces of a system and their interfaces so that the result is the simplest, least expensive and yet most efficient system possible. Structured design combines the essential theory with the tools and techniques required to put the theory into practice. This structured design approach, which has evolved over ten years of research and teaching as documented in the May issue of the *IBM Systems Journal*, provides the key to structured programming. COURSE MATERIAL: Over 100 pages of notes prepared by Larry Constantine. INSTRUCTOR: Larry Constantine, an independent EDP consultant. FEE: $375 including course materials and lunch. LENGTH: 3 days.

- **ADVANCED PROGRAMMING TECHNIQUES**

This course drills the programmer in a wide range of practical programming skills ordinarily unavailable in a "basic" training course offered by most hardware manufacturers or industrial training programs. The primary emphasis is on program implementation techniques; included in this discussion are optimization techniques, data structures, dynamic storage allocation techniques, decision tables and table lookup techniques. A major class exercise is used to illustrate the key implementation techniques. COURSE MATERIAL: The 450-page prepublication manuscript *Techniques of Programming* by Edward Yourdon and copies of the visuals. INSTRUCTOR: John McGeachie, Director of Data Processing at Dartmouth College. FEE: $375 including course materials and lunch. LENGTH: 3 days

Education Market Vast But Sensitive

LONDON – Education in Europe is a sector which offers a potentially vast – if somewhat politically sensitive – untapped market for computer manufacturers.

Without the support of the education market, the minicomputer industry would possibly never have come into being, according to *EDP/Europa Report* (EDP/ER).

"Without giving support to the education market, many underdeveloped countries are likely to remain in that state," the report said.

"The education market thus becomes critical to both the development of the computer industry and to the development of computer usage within a country."

A point to keep in mind, however, is the political sensitivity of this market, since it is often public money which is spent on computing equipment, with purchase decisions made at the national level.

Looking at the national policies of three European countries, *EDP/ER* noted that the state-financed schools' influence in Europe has oriented development toward national regional centers.

In Denmark, a "relatively highly developed country" according to the report, public expenditure on computers for education and research was $6.88 million in 1972-73, $4 million for 1973-74 and is projected to be $5.6 million in 1977-78.

In Norway, "a fairly sophisticated computer-using nation," a national committee is responsible for DP activities in education.

The framework for a regional center organization exista in Norway, the report stated, with existant installations at four universities: Bergen (Univac 1110), Oslo (CDC 3300, CDC Cyber 74, Univac 1108 and two Nord-1s), Trondheim (Univac 1108) and Tromso (Nord-1 and Nord-20).

Finally, the report discussed Finland, where the Ministry of Education controls educational computing which centers around a single national DP center. Forty-five percent of computing time on the center's Univac 1108 is for educational purposes.

Foreign Orders & Installations

MADRID – Eighty-seven Spanish thrift institutions are planning an on-line network, expected to be the largest of its kind in continental Europe.

The Spanish Confederation of Savings Banks has ordered two 256K NCR Century 300 computers as the nucleus of the new system, which will be used for transfer and clearing operations among participating institutions and for integrated general accounting.

The Century 300s will act as a central file for information from all banks in the confederation and the various banks' computers, regardless of manufacturer, will be linked on-line to the twin CPUs.

Later plans call for a link into the Swift Bank network, which will enable the confederation to provide services for the large number of Spanish workers in Europe and Spanish businessmen traveling abroad.

Papeterie Metenett, France, has ordered its second Measurex 1000/75 computer control system which will be installed on a Fourdrinier paper machine.

Commercial Bank of Australia Ltd. has ordered two B4700s from Burroughs to serve as the nucleus of a nationwide network for the capture and communication of data.

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Executive Corner

- The founders of Datapoint Corp., J.P. Ray and Austin O. Roche, have resigned as directors and officers of that company to form a new corporation which will develop solid state mass memory systems.
- Computer Network Corp. has appointed Lee Johnson president of the firm, following the resignation of Carl Shumaker.
- Frank P. Adams and Richard S. Nair have been elected to the board of directors at Boothe Computer Corp.
- Sterling Computer Systems, Inc. has elected Michael H. Partin president and chief operating officer.
- Edward T. Keating has been named president of Stromberg Datagraphix, Inc.
- Charles C. Cook has been appointed president and chief executive officer of CBM, Inc., a computer systems consulting firm.
- Thomas A. Schmitz has been promoted to the position of vice-president and director of marketing with responsibility for worldwide marketing and sales of Pansophic Systems products.
- Wang Laboratories, Inc. has elected Jeffrey Chuan Chu to senior vice-president, North American operations, and Gerald E. Jones to senior vice-president, international operations.
- Joe D. Foster has been named executive vice-president of Itel Corp.'s Data Products Group.
- Burroughs Corp. has elected Harry B. Rottiers to the position of senior vice-president.
- Arden P. Scott has been promoted to executive vice-president of National Information Systems, Inc.
- Frederick B. Schudel has been appointed a senior vice-president of California Computer Products, Inc.
- John C. Storck, Jr. has been named executive vice-president of Computer Systems and Education Corp. of East Hartford, Connecticut.
- Recognition Equipment, Inc. has announced the appointment of Robert Pierson as vice-president, international operations.
- John H. Busch has been elected vice-president of Inforex, Inc.
- Lewis R. Merritt and Orland F. Bergere have been appointed vice-presidents of Decision Data Computer Corp.
- Richard F. Musson has been appointed vice-president, sales, for Microdata Corp.
- Frank X. McEntee has become vice-president of manufacturing and an officer for Delta Data Systems Corp.

Front-End Check Protects Privacy Of Client Data at Canadian Firm

By T.M. Whiteman
Special to Computerworld

TORONTO – A Canadian service company has tackled the problem of protecting client data security in a multiuser environment by creating a "front end" check for every job that enters its computer.

"This is specially written software that scans all jobs to insure that they have a valid account number, have been sent from a valid remote site, and are only accessing data authorized for that account number," A.J. Simms of Datacrown Ltd. explained.

Datacrown is a subsidiary of Crown Life Insurance Co. and handles work for over 50 companies in Canada and the U.S.

"This software uses files created by an automated library system," Simms said, "thus our software can identify every disk and tape volume in the computer room: who owns it and which accounts are authorized to access it.

"This type of security checking is a must to prevent the accessing or destruction of one client's data by another client. Our proprietary software includes the requisite security and goes beyond this to automate library control, job scheduling and client accounting," he mentioned.

"Our precise investment in these areas is of course confidential," he added, "but to give you some idea of scale, over 30 man years have been invested so far, along with extensive computer resources."

Datacrown has a 4M-byte IBM 370/168 installed and a second 168 is scheduled for installation in October.

Simms defined backup as "the ability to continue processing after the loss of an integral part of the system."

"When we examined the idea of 'off-site' backup – another machine – we concluded that it would be virtually impossible to maintain a workable backup arrangement for all of our workload." Specific systems could be made "portable," he said, "but the entire workload was unmovable.

"Once you reach that conclusion, you must purchase sufficient tape drives, disk drives, channels and controllers so you can lose some and still run your work load. A second CPU is hard to justify when you are working with 370/168 class equipment," he said.

"Our last 12 months' experience is interesting in that we have only six outages of greater than one hour, and none greater than six hours."

The final area to examine for data security is the telecommunications facility that brings the client's work to the center, said Simms.

"Fortunately, the frequency of breakdown and length of time to repair is sufficiently good that terminal or line backup is not normally justified.

"We have negotiated interlocing terminal backup arrangements among our clinets and supplied backup 'dial' connections to our center for extremely critical applications," he remarked.

Summarizing the security and backup aspect of managing multiuser systems, Simms said "you must prevent unauthorized access to client data. Back up individual components of your facility and don't look for off-site backup for the whole workload.

"Also, don't forget that 50 terminals needing your system simultaneously are relying on you – not your supplier."

Expansions

Information International, Inc. has leased an 86,000 sq-ft building in Culver City, Calif. to consolidate its activities.

Computer Automation, Inc. has opened regional service centers in Ramsey, N.J. and Chicago.

Pertec Corp. is adding 50,000 sq-ft to its El Segundo facility for additional tape transport and disk drive production.

Eductronics Systems International has relocated its headquarters to Kansas City, Mo. The firm is at 3535 Broadway.

Business Systems Technology, Inc. has opened district sales offices in New York City, Berwyn, Pa. and Houston, Texas.

General Systems International, Inc. has consolidated its floppy disk drive operations at its Anaheim facilities.

True Data Corp. has moved to 16,000 sq-ft building at 2701 S. Halladay, Santa Ana, Calif. to accommodate increased production requirements.

Prime Computer, Inc. has opened a 61,800 sq-ft facility to consolidate the company's marketing, administrative, engineering and manufacturing operations. The firm is now at 145 Pennsylvania Ave., Framingham, Mass.

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But May Not Last

Telex Earnings Up for First Quarter

TULSA, Okla. – Telex Corp.'s first-quarter earnings and revenue improved substantially over the year-ago figures, but President S.J. Jatras warned that "there can be no assurance that the improvement in operating results can be sustained."

Most of the improvement, he explained, resulted from increased outright sales of peripheral equipment including the sale of some previously leased equipment by the Computer Products Group.

"While we plan to continue our efforts to make such sales, it is probable that they cannot be continued at the first-quarter rate," he added.

Revenues jumped to $29.5 million from $19.8 million in the year-ago quarter. Earnings soared to $165,000 or 2 cents a share compared with a loss of $4 million or 38 cents a share in the same 1973 period.

The combined U.S. and Canadian operations of the Computer Products Group continued to be unprofitable, showing a loss of $791,000 for the quarter which is, however, less than the year-ago loss and is due primarily to increased sales of equipment and reductions in operating expenses, the company said.

Income of $359,000 from the European operations of the Computer Products Group helped offset the loss.

Lease rental income from peripheral equipment totaled $6.4 million compared with $5.3 million for the year-ago period.

Telex Communications Group contributed a profit of $597,000.

Backlog was down sharply. As of June 30, Telex had firm orders for sale or lease of equipment having a sales value of $18.8 million compared with $33.6 million last year.

Wyly Reports Mid-Year Profit, Financing Pact

DALLAS – Wyly Corp.'s six-month earnings increased over those of the year-ago period despite a $295,000 loss in the second quarter.

The loss reflected an underwriting debit of $3 million in insurance operations due primarily to storms in the Southeast and Midwest, the firm said.

Total revenues for the three months were $53.6 million compared with $50.7 million last year when there was a restated loss of $366,000 or 4 cents a share.

For the six months, the corporation earned $910,000 or 11 cents a share compared with $771,000 or 9 cents a share in the year-ago period. Revenues rose to $104 million compared with $100.5 million last year.

Wyly's University Computing Co. subsidiary's six-month revenues rose to $43.2 million from $42.2 million, while pretax income, including a nonrecurring $1.3 million sale of software, more than doubled to $4.7 million from $2.1 million in the year-ago period.

Money for Datran

Wyly said it has entered into a financing arrangement with Walter Haefner Holding AG to provide interim cash needs for Wyly's Data Transmission Co. (Datran) subsidiary.

Wyly and Haefner Holding each plan to advance Datran up to $5 million. Haefner Holding's loans are due 90 days from each advance and are secured by liens on the stock of Wyly's insurance subsidiaries.

The $10 million of interim financing, along with $4 million of additional vendor financing arranged by Datran, will permit continuation of the Datran near-term construction program, Wyly said.

Accounting Standards Proposed

STAMFORD, Conn. – In an effort to require companies in the development stage to use accounting procedures similar to those required of established firms, the Financial Accounting Standard Board has released a draft of proposed standards.

The proposed standards would require development-stage companies to charge to expense as incurred those costs which will be charged to expense as incurred when the company is no longer in the development stage.

Similarly, they may defer only those types of costs which other firms are permitted to defer.

Developing firms would also be required to report sales, interest and other income as revenue in income statements and to assign dollar amounts to shares issued for non-cash consideration, and to the consideration received, at the time of issuance.

Requests Comments

Comments on the proposed standards should be sent in writing by Sept. 30 to the Director of Administration, Financial Accounting Standards Board, High Ridge Park, 06905.

Tektronix Earnings Climb 28%

BEAVERTON, Ore. – The figures for the year at Tektronix, Inc., maker of graphic displays and test equipment, reveal 1974 was a year of growth.

Earnings managed to grow 28% despite a $1 million loss on foreign currency fluctuation and interest expenses that nearly doubled. Revenues rose 34% to $271.4 million from $202.9 million in 1973.

Earnings reached $21.4 million or $2.47 a share compared with $16.7 million or $1.94 a share last year.

Interest expenses rose to $1.2 million from $666,000 in 1973.

Backlog Up 42%

Incoming orders grew 28% to $297.3 million from $232 million last year, while the backlog of unfilled orders rose 42% to nearly $74 million from $52.2 million in 1973, the firm said.

The results for 1974 include those of the Grass Valley Group, which merged with Tektronix in February.

Earnings Reports

BRANDON APPLIED SYSTEMS
Three Months Ended May 31

	1874	1973
Shr Ernd	$.07	.....
Revenue	1,784,458	$515,730
Earnings	502,172	(216,521)

ELECTRO-CRAFT
Three Months Ended Juna 30

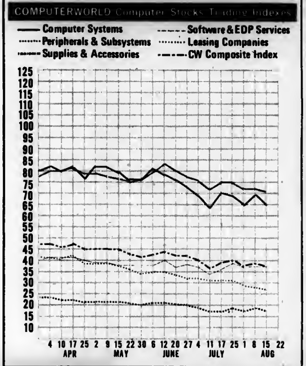
	1874	1973
Shr Ernd	$.05	$.05
Revenue	2,284,000	1,719,000
Earnings	131,000	126,000
6 Mo Shr	.10	.09
Revenue	4,435,000	3,359,000
Earnings	256,000	221,000

ECRM
Three Months Ended Juna 29

	1874	1973
Shr Ernd	$.04	$.01
Revenue	1,958,802	1,441,304
Earnings	46,870	11,494
6 Mo Shr	.06	.....
Revenua	3,705,164	2,439,385
Earnings	70,661	(112,042)

DATA CARD
Three Months Ended Juna 29

	1974	1973
Shr Ernd	$.15	$.13
Revenua	1,964,000	1,411,000
Earnings	220,000	191,000



ELECTRONIC TABULATING
Six Months Ended Juna 30

	1874	1973
Shr Ernd	$.31	$.33
Revenua	1,400,17$	1,187,206
Spec Cred	.....	100,000
Earnings	131,884	194,745

TECHANALYSIS
Three Months Ended June 30

	1974	1973
Shr Ernd	$.06	$.05
Revenue	369,978	339,555
Earnings	33,000	28,000
6 Mo Shr	.12	.10
Revenue	724,841	680,468
Earnings	63,400	53,000

COMPUTER TRANSCEIVER SYSTEMS
Three Months Ended May 31

	1974	1973
Shr Ernd	$.17	$.08
Revenue	1,084,000	975,600
Earnings	151,300	49,200

BUNKER RAMO
Three Months Ended June 28

	1974	a1973
Shr Ernd	$.21	$.36
Revenue	82,379,813	74,082,909
Earnings	1,874,484	2,928,235
8 Mo Shr	.53	.61
Revenue	159,302,894	138,440,798
Earnings	4,348,291	5,148,637

COMPUTER MACHINERY
Three Months Ended June 30

	1974	a1973
Shr Ernd	$.16	$.08
Revenue	15,204,000	11,681,000
Earnings	836,000	386,000
6 Mo Shr	.34	.15
Revenue	29,209,000	22,366,000
Earnings	1,773,000	728,000

a-Restated.

NASHUA
Three Months Ended Juna 30

	1974	1973
Shr Ernd	$.97	$.71
Revenua	83,749,000	56,247,000
Earnings	4,487,000	3,229,000
6 Mo Shr	1.65	1.27
Revenue	154,764,000	104,362,000
Earnings	7,604,000	5,769,000

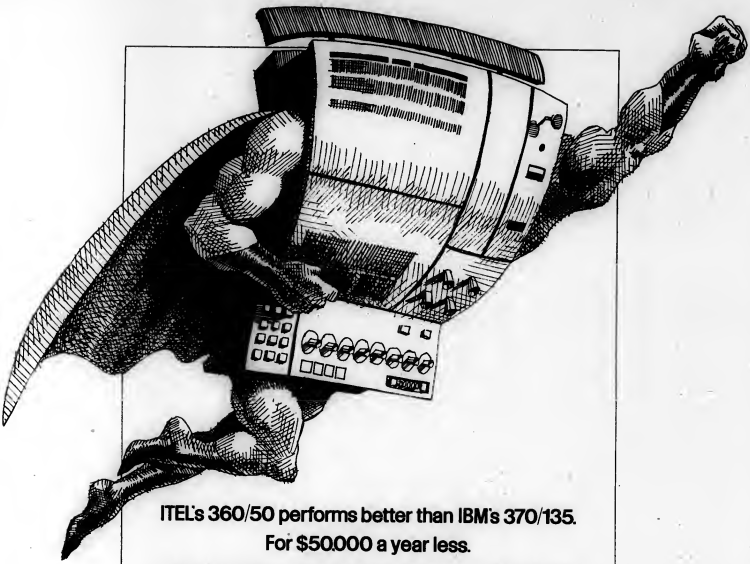
SCIENCE MANAGEMENT
Three Months Ended June 30

	1974	1973
Shr Ernd	$.07	$.09
Revenue	4,280,000	3,803,000
Earnings	148,000	194,000
6 Mo Shr	.11	.18
Revenue	8,044,000	7,431,000
Earnings	244,000	399,000

Computerworld Stock Trading Summary

All statistics compiled, computed and formatted by
TRADE★QUOTES, INC.
Cambridge, Mass. 02139

Due to mechanical problems, the stock table was not ready at press time.



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